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Substance Abuse Screening with Deaf Clients: Development of a Culturally Sensitive Scale

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Substance Abuse Screening with Deaf Clients: Development of a Culturally Sensitive Scale

by

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Dedication

To Barry L. Johnson, who inspires me.

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Substance Abuse Screening with Deaf Clients: Development of a Culturally Sensitive Scale

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Substance abuse and dependence are assumed to occur at the same frequency in hearing and Deaf communities, although screening instruments for substance use disorders have not yet been created and validated in American Sign Language (ASL). The aim of this study was to create and validate a new substance abuse screening tool in ASL.

In order to create a valid and appealing screening tool for Deaf populations, the researcher created a pool of items, and collected feedback from nationally-known experts in Deafness and substance abuse. The final item list was translated into ASL by an Austin team of experts, and a native signer was filmed signing the items. The video clips were matched with the web page to create the instrument, which was put onto a laptop computer.

The final validation of 131 Deaf individuals across five sites in the United States indicated a Cronbach's alpha of .87 for ten items. Convergent validity was established

using the Major Depression section of Module A of the SCID. A significant relationship was found between *major depression* and *score* (r =.305, p = .000). Discriminant validity was assessed by examining the relationship between *age* and *score* and, as hoped, no significant correlation was found (r = .-079, p = .367). Further evidence of convergent construct validity was evidenced by the correlation between *score* and *diagnosis*. There is a significant correlation on the DAAD for individuals who have an alcohol dependence diagnosis (r = .555, p =.000, α = .01) or a substance dependence diagnosis (r = .569, p = .000, α = .01). Known-groups validity was evidenced via using ANOVA on the transformed data, with the Eta statistic as the validity coefficient. Eta was significant at the .05 level (Eta = .626, Eta^2= .392), indicating a strong association.

The result is that a culturally sensitive screening will be available identify Deaf individuals who have substance dependence disorders. The instrument may also help researchers who are trying to estimate the number of Deaf people who have substance dependence disorders or are interested in screening Deaf individuals for substance dependence disorders for other research purposes.

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Chapter One: Statement of the Problem

INTRODUCTION

There are no reliable estimates of Deaf[1] people with substance use disorders (Guthmann & Sandberg, 1995; Steinberg, 1991; Sylvester, 1986). Some studies report that substance abuse in Deaf populations is the same as hearing, and others report that it is higher (Guthmann & Blozis, 2001; Sylvester, 1986; Whitehouse, Sherman, & Kozlowski, 1991). Proportionately, substance abuse and dependence are projected to be the same in the Deaf community as in the hearing population, but because of the unique language of the Deaf, chemical dependency services for the Deaf are nearly non-existent (Boros, 1981; Guthmann & Sandberg, 1995; Hetherington, 1979; Jacobs, 1986; Lane, Hoffmeister, & Bahan, 1996; Lipton & Goldstein, 1997; McCrone, 1982; Sylvester, 1986; Whitehouse et al., 1991).

Part of the poor service provisions for the Deaf include a lack of psychometrically validated instruments for their language and culture, even though substance abuse screening tools exist for other minority groups (Nelson, Bui, & Samet, 1997; Saitz, Lepore, Sullivan, Amaro, & Samet, 1999; Schafer & Cherpitel, 1998).

Some work is being done to develop technology to measure the extent of substance abuse in the Deaf community (Lipton & Goldstein, 1997). This lack of instruments for Deaf individuals may be due, in part, to the complexity involved in creating and validating a scale for this population, whereby the scale developer must possess the following: sign

[1] It is common in the field of Deafness to use an uppercase "D" to refer to a group of people who share a culture and a lower case "d" to refer to a group people who can not hear. Such conventions will be used throughout this paper.

language fluency, an understanding of mental health or substance use disorders, knowledge of Deaf culture, and expertise in psychometry.

As with any minority group, linguistic and cultural considerations must be taken into account when using tests not normed for their population. The syntax of American Sign Language (ASL) differs considerably from spoken and written English, and as a result, Deaf people read English at about a 4.8 grade level. Therefore, instruments written in English are unlikely to be useful with Deaf individuals who rely on ASL (Lane et al., 1996), including traditional substance abuse screening instruments.

Hearing professionals often believe that an acceptable way to overcome the language barrier with Deaf clients is simply to hire an interpreter. It has been well documented in the Deafness and mental health literature that using interpreters in assessments and treatment is not a straightforward process (Corker, 1994; Freeman & Conoley, 1986; Glickman, 1996; Lane et al., 1996; Lewis, 1996; Lipton & Goldstein, 1997; Roe & Roe, 1991; Steinberg, Sullivan, & Loew, 1998; Vernon & Miller, 2001). Administering a scale through an interpreter is problematic because there is no standardized translation used by each interpreter, and because the interpreters vary across skill levels. The result is distortion of the items' meaning (Lane, 1993; Spector, 1992; Tran & Arioan, 2000; Vernon & Miller, 2001). Therefore, in order to accurately screen for substance abuse in Deaf populations, a scale must be created specifically for their language and culture.

SCREENING DEAF INDIVIDUALS FOR SUBSTANCE ABUSE

Creating scales for Deaf populations entails more than simply translating an existing scale into sign language. Much of the terminology used in the substance abuse treatment field does not have a direct translation in ASL, such as the word "blackout" (Guthmann & Sandberg, 1988). Signs have regional variations, particularly for covert behaviors, which is similar to having an "accent" in sign language (Lane et al., 1996). For example, in one study, Deaf participants showed researchers six different signs for the word "hangover" in two nearby southern cities (Alexander et al., 2005). Regional variations are the "proverbial brick wall" to standardized scale creation in ASL (D. Dittfurth, personal communication, July 31, 2003).

Deaf individuals are not acculturated to hearing society, and therefore, find hearing idioms confusing. For example, the commonly used alcohol screening test, the CAGE, is based upon an acronym for each of the tool's four questions. The "E" stands for "Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (Eye-opener?)." This item was unclear for Deaf participants because it uses hearing idioms, "steady your nerves" and "Eye-Opener." There are no signs that correspond to these terms in sign language while maintaining their intended meaning (Alexander et al., 2005).

CONTRIBUTION OF DISSERTATION

This dissertation seeks to create a substance use screening tool in ASL for individuals who are members of the Deaf community. In order for the screening tool to be reliable and valid, it must be culturally sensitive. In a search of the literature, no

studies were found in which commonly used substance abuse screening scales were validated on Deaf individuals.

This dissertation uses a cultural model of Deafness, an approach that is different from the way the mental health profession, particularly social work, has traditionally viewed Deaf people (Alexander, 2003). The cultural model of Deafness views Deaf individuals as members of a minority group, not as individuals who are impaired. This dissertation acknowledges and supports the culture of Deafness. Therefore, the barriers typically faced by researchers trying to measure Deaf populations will be addressed using the same methods as researchers who study other minority populations, and not researchers who study people with handicapping conditions.

Developing the new scale using the cultural model will necessitate working collaboratively with Deaf individuals, instead of asking Deaf people to be "merely the passive objects of that research" (Lane, 1993). When researching an underserved minority population, the researcher must be both culturally aware and willing to learn from the members of the community she researches. Respect for the population being researched is essential, as well as a willingness to share power with the members of that community (Pollard, 1994).

Defining who is "Deaf" for the purposes of collecting data is problematic, since there is no formal way to be a member of the Deaf community. Individuals who are members of the Deaf community varying widely in the etiology and amounts of hearing loss, which can impact the way they understand and respond to a screening (Alexander et al., 2005). For the purposes of this dissertation, it has been determined that the best definition of a "Deaf person" is a self-identified, prelingually deafened person, who can

not hear spoken conversation (Personal communication, D. Dittfurth, August 6, 2003). Allowing Deaf people to self-identify is consistent with how other studies identified participants of different cultural backgrounds (Schafer & Cherpitel, 1998).

RELEVANCE TO SOCIAL WORK

While social work shares theoretical frameworks with other disciplines, one way social work distinguishes itself from similar fields such as sociology, psychology, and education is emphasis on social and economic justice. Social work has a long history of involvement with oppressed populations and the profession, believes that promoting social justice for oppressed populations fulfills a moral duty to society (Zastrow, 1993).

Social work has especially been interested in serving oppressed and disenfranchised clients in need of advocacy. Although relatively new, the profession of social work has roots in charity organization societies, which sought to address the needs of the impoverished, the unemployed, those with mental illnesses and those who had disabling conditions. Before trained social workers, religious do-gooders carried out charity work, controlled by private relief agencies. These "friendly visitors" viewed the source of the problem as being the fault of the individual, and the intervention consisted of religious admonishments. The settlement house movement in America in the 1800's, with activists such as Jane Addams, created a shift in the way issues were addressed. The workers were from middle and upper class backgrounds, but they lived in the impoverished neighborhoods in order to witness the hardships of poverty firsthand. Instead of "blaming the victim" for their impoverished situation, the settlement house workers collaborated with the community to close the gap between the rich and the poor,

while trying to improve living conditions, and providing needed services such as child care, literacy, English acquisition, and job skills (Trattner, 1974; Zastrow, 1993).

As the profession of social work became more established, other oppressed populations were identified and the profession of social work branched into many specialty areas to include individuals of all races, ethnicities, socio-economic status and languages. However, as outlined in great detail in the next chapter, social workers still rarely serve the Deaf despite the fact that Deaf individuals are estimated to suffer from the same rates of poverty, negative stereotyping, unemployment, illiteracy, drug and alcohol issues, mental health disorders and domestic violence as other oppressed groups.

What accounts for this glaring oversight? The language difference may be the biggest barrier for hearing social workers to overcome. Two decades ago, Jacobs (1986) noted "[m]ost of the social workers' concern for the unfortunate people who need help does not encompass deaf people. They either hesitate or dislike to assume the burden of establishing communication with them, therefore, leaving them in limbo, outside of their area of concern" (p. 86). Hearing social workers who want to work with the Deaf must complete their social work education and obtain a licensure or certification as prescribed by their state, the same as other social work professionals. In addition, they must also learn sign language. Developing just a basic sign vocabulary takes an average hearing person about one year. Even then, most hearing individuals' signing skills are still not good enough for competent social work practice. The range of expressive sign skills needed takes years to develop, and a professional vocabulary takes additional time. Social workers who work with the Deaf must also have excellent receptive skills to understand clients who might be have a mental disorder, substance abusing, combative,

have low language skills or any combination of the above. Once practicing, the signing social worker must be able to accurately differentiate between mental disorders or substance abuse disorders, language delays, cultural differences and manipulative behaviors, while being the "Jack of all trades," because Deaf clients often have no where else to go for services. Few social workers have such dedication to the Deaf.

In light of the inadequate services to Deaf populations by social workers, the aims of this dissertation are twofold. First, this dissertation seeks to create a substance use disorder screening tool for Deaf individuals and determine its psychometric properties (validity and reliability). Second, it seeks to inform helping professionals, particularly social workers, about the cultural model of Deafness and the dire need for competent services to Deaf populations.

Chapter Two: Literature Review

INTRODUCTION

This chapter address the current literature on mental health and substance abuse treatment of the Deaf. The first section traces the history of the current schism in the field of Deafness between those who view Deafness as a disability and those who view it as a culture. The Deaf Culture section is a discussion of the issues that providers and researchers must address when working with Deaf clients. Finally, there is a review of the current literature on substance abuse screenings, as well as a discussion of the appropriateness of these tests with minority populations.

CULTURE VERSES DISABILITY

WHO ARE THE DEAF? Surprisingly, it is difficult to get an accurate estimate of who compromises the Deaf community (Padden & Humphries, 1988; Steinberg, 1991), as one does not need to be deaf in order to be Deaf (Padden & Humphries, 1988). The use of "deaf" with a lower case "d" refers to an individual who has the audiological condition of not being able to hear; "Deaf" with a capital "D" refers to a person who belongs to a certain cultural group. For example, hearing children whose parents are Deaf might also think of themselves as Deaf, even though they can hear. Conversely, a person may not be able to hear, but still associate with the hearing world; such individuals would be considered "deaf" but not "Deaf" (Padden & Humphries, 1988). The U.S. National Center for Health Statistics reports 9% of the population has a hearing loss (Padden & Humphries, 1988). However, this number is not a good reflection of the

size of the Deaf community because it includes people who do not use sign language, those who lost their hearing later in life, those who are hard-of-hearing, and those who are orally trained (i.e., use speech and lip-reading, thereby socializing with the hearing world) (Padden & Humphries, 1988). Perhaps the best available estimate of the Deaf is the 500,000 to 2 million reported signers in the United States (Lane et al., 1996).

Although how someone becomes deaf is not significant for their membership in the Deaf community, it is noteworthy for researchers because it impacts how much language they might have obtained prior to becoming deaf (Jacobs, 1986; Lane, 1993). Language acquisition becomes a factor when trying to obtain a sample of Deaf individuals (Lane et al., 1996). Deafness occurs in various ways, but few inherit their deafness, as only 10% of deaf people have deaf parents (Padden & Humphries, 1988). The rest become deaf while in utero, through illness or for unknown reasons (Lane, 1993).

It is a myth that Deaf people are completely deaf. Most have some hearing, in various ranges, depending on the nature of their loss. Deaf people lose their hearing at different ages and lose different amounts of hearing in different ranges. Those who lose their hearing before acquiring language are known as prelingually deafened, and those who lose their hearing after acquiring language are known as postlingually deafened. The difference in the two groups is significant, because postlingually deafened people have exposure to spoken language, which easily becomes building blocks for spoken vocabulary development, based upon English. Unless prelingually deafened individuals are raised by parents who sign, they have no exposure to any sort of language, which is an enormous disadvantage, given the "window of opportunity" of language development

in children. Therefore, language acquisition, especially for spoken language, is an arduous task for these individuals. Unfortunately, most hearing people do not understand the differences between those pre and postlingually deafened. The result is that unfavorable comparisons are made about prelingually deafened individuals when they fail to learn to speak or read English (Lane et al., 1996).

The onset and etiology of individuals' deafness is also significant to researchers because individuals with some etiologies, such as meningitis and maternal rubella, have a higher incidence of other handicapping conditions. Co-morbidity can affect the outcomes of a mental health and substance abuse studies simply because the researcher can not be sure which condition they are measuring, or if the score is due to a combination of conditions (Jacobs, 1986). A researcher must take into account all of these factors in order to identify a suitable sample for what he or she is studying.

MEDICAL MODEL VERSES CULTURAL MODEL. Hearing people value the ability to hear because it is through hearing that we connect with others. Hearing is so important in our society that when we want to punish someone, we can do so by giving them the "silent treatment" (Lane, 1993). The tragedy is that despite the enormous evidence to the contrary, the hearing majority projects its assumptions, biases, and fears onto people who can not hear, believing that deaf people wish to be rescued (Lane, 1993; Padden & Humphries, 1988). The paternalistic belief that hearing people need to rescue deaf people from their affliction, a term known as "audism," is the basis of the medical model verses the cultural model debate (Lane, 1993; Padden & Humphries, 1988).

Historically, deaf people were considered inferior and denied the same rights as other citizens. The Romans deprived them of all legal rights and early Hebrew laws

forbade them to be married. The Christian Church would not allow the Deaf to take the sacraments because they could not repeat the needed words. In the 1800's in America, deaf males were not allowed to vote (Higgins, 1980). They were often used in traveling carnivals freak shows (Rothman, 2003), and were thought to be a burden on society (Higgins, 1980). Laws were passed in Georgia and Alabama so that traveling carnivals could not abandon deaf individuals in their states (Higgins, 1980).

The rationale for exiling deaf people from the community was based upon the belief that only spoken language created the ability to think. Since deaf individuals did not speak, it was assumed that they lacked the capacity to develop language, and consequently, could not think. Beliefs about the importance of spoken language still exists today (Higgins, 1980; Lane, 1993).

Hearing educators often believed that sign language was inferior to spoken English and tried to suppress it. Throughout history, signed languages were thought to be crude, vulgar and animalistic. Educators believed if children were allowed to sign, they would use it as a crutch and never learn to speak (Lane, 1993). Educators created oral schools in which sign language was forbidden and children caught signing had their hands tied and were beaten (Lane, 1993). This practice is analogous to white educators who punished non-English speaking children who used their native language in school (Higgins, 1980; Lane, 1993). The rationale was the same: one day the children would have to live in the larger society and they would need to be able to communicate with those who speak English (Higgins, 1980). Lane et al. (1996) note that "…[L]ike other minority languages, ASL has struggled for survival and evolved into its present form, despite hearing efforts to eradicate it" (p. 43).

The belief that sign language was not a language was not based upon any studies of the language, but was uncritically accepted by linguists and deaf people (Lane, 1993; Padden & Humphries, 1988). Therefore, the common thinking was that to be deaf was to be inferior. Thus, even now when the diagnosis of deafness is confirmed, a baby goes from being normal to being "gravely impaired" in one fell swoop (Lane et al., 1996).

The medical/pathology model of deafness has been the primary paradigm in the education of Deaf individuals. The medical/pathology model seeks to restore the deaf person to hearing society with hearing aids, speech lessons, and cochlear implants. Those who rely on the medical/pathology model use the term "hearing-impaired" because they focus on the impairment. Most hearing people, being born into the hearing majority, assume that this is the "correct" way to be because of the great value on the ability to hear (Lane, 1993; Padden & Humphries, 1988). Padden and Humphries (1988) note "The traditional way of writing about Deaf people is to focus on the fact of their condition – that they do not hear – and to interpret all other aspects of their lives as consequences of this fact" (p. 1).

Only recently has ASL been recognized as a language with its own syntax and grammar (Lane et al., 1996). The change was the result of a 1960 book published by a hearing linguist and professor named William Stokoe. In his book, Sign Language Structure: An Outline of the Visual Communication Systems of the American Deaf, Dr. Stokoe demonstrated that sign language could be broken down into parts and followed a syntax, thus asserting that it was an actual language, not merely mime or gesture. Deaf people and researchers did not understand or accept Dr. Stokoe's conclusions because it went against literally thousands of years of thinking about sign language (Eastman,

1980). Over time, his ideas gained acceptance and his genius has been recognized, as many universities today offer ASL as a foreign language.

By legitimizing ASL, Garretson, (1980) says that Stokoe "…created a renaissance among deaf persons everywhere. It has caused a rebirth of hope, pride, and confidence in ourselves as we take a more active role in the modern world" (p. vi). Deaf people began to value ASL. As other minorities have gained power and recognition, so have the Deaf. The Deaf started to refuse to be labeled as "disabled" and demanded that others become aware of their unique culture. The bitter debate between the supporters of the medical model and supporters of the cultural model continues to this day in the field of deafness (Higgins, 1980; Jacobs, 1986; Lane, 1993; Padden & Humphries, 1988; Padden, 1980).

DEAF CULTURE

A group of people is considered to have a culture if they have four attributes: a language that is unique to that group, learned rules for behavior, values, and traditions (Padden, 1980). Deaf people meet all of the criteria for having a distinct culture. Their language is American Sign Language (ASL). Deaf people follow specific rules for behavior, such as the rules that govern how they interact socially. The Deaf collectively value traits, such as expressive signing and socializing. Their traditions, such as storytelling, pass down their history of oppression, and their pride at being Deaf (Lane et al., 1996; Padden & Humphries, 1988).

However, unlike most cultural groups, the members are not born into their culture (Padden & Humphries, 1988). Because 90% of Deaf people have hearing parents, Deaf people learn to be Deaf from other Deaf people (Higgins, 1980; Jacobs, 1986; Lane et al.,

1996; Padden & Humphries, 1988). In this way, they are like gay men and lesbians and people with disabilities, whose parents do not necessarily share their culture (Higgins, 1980).

THE DEAF COMMUNITY. The most central feature of Deaf culture is the Deaf community. The Deaf community is not a physical location, although some cities have large numbers of Deaf people who form clubs and bowling leagues and gather together for outings (Jacobs, 1986; Padden, 1980). The Deaf community refers to the collective group of people, scattered throughout the United States, who share the same history, values and beliefs (Jacobs, 1986; Lane et al., 1996; Padden, 1980). There is no official way to become a member of the Deaf community, although Deaf people will say they are a "member of the Deaf community." The Deaf community has a "coast to coast grape vine" which can be a blessing and a curse (Higgins, 1980). There is a feeling of family and support, but it is harder to escape one's past or to have privacy (Higgins, 1980; Jacobs, 1986; Lane et al., 1996). The Deaf community is tight-knit and usually closed to hearing people. A good example of the exclusivity is that Deaf marry other Deaf 90% of the time (Jacobs, 1986; Lane et al., 1996).

SIGN LANGUAGE. American Sign Language (ASL) is the language of the Deaf community. Lane et al. (1996) note "Nothing is more central to that culture and dearer to the hearts of Deaf people than their language" (p. 42). Why is ASL so important? First, it is the primary way of communicating with the Deaf community (Lane et al., 1996; Padden & Humphries, 1988). ASL is the link to Deaf wisdom, values, history, tradition, and poetry. It shows a commitment to the Deaf world and that one is not ashamed of being Deaf. Using ASL is a symbol of identity, a way to interact, a storehouse of cultural

values, knowledge of customs and a way of providing information. ASL means the Deaf person can participate fully (Lane et al., 1996; Padden & Humphries, 1988).

To Deaf individuals there is a "sacredness" about signing (Padden, 1980). Signs are formed in a systematic way, following rules of movement and placement (Baker, 1980). This author has witnessed many debates among Deaf people, some in fun, some very serious, over the "correct" use of a sign. Deaf people generally refrain from speaking and avoid things that have to do with speech. They simply do not want to "act hearing" because it disassociates them from the years of being forced to speak as children (Padden, 1980). The Deaf community resents tampering with sign language, which hearing educators have done to make it more like English. They believe that if a new sign needs to be created, the Deaf should be the ones to do so (Higgins, 1980; Padden, 1980)

Because sign language is visual, Deaf people learn it naturally, much in the natural way that hearing people learn spoken language. Uninformed hearing people, unaware that ASL is an actual language, assume that ASL is simply pantomime and fingerspelling. ASL has also been criticized for being too limiting because for some English phrases there is only one corresponding sign (Lane et al., 1996). Hearing people also wrongly believe(d) that sign language could not express abstract concepts (Lane, 1993; Lane et al., 1996) such as "God."

American Sign Language is a non-written language and capturing ASL in written form is called a "gloss" (written translation) (Baker, 1980; Lane, 1993). Since ASL does not follow English syntax, Deaf people tend to leave out "extra" words such as "the" "a" "then" and past or future tense as used in English, such as the "ed" suffix as in "finished"

(Jacobs, 1986). For example, the ASL gloss for "The woman left the book" is WOMAN LEAVE BOOK. ASL is by no means easy for hearing people to acquire later in life. The reason is that a small change in facial expression, body language, eye or head movements could change that same gloss into "Did the woman leave her book?", "The woman didn't leave her book", "Yes, the woman did leave her book", and "Didn't the woman leave her book?" (Baker, 1980). As with translation between any languages, it is not a word-for-word process. Some signs only require one sign for an entire English phrase such as YOU-SHOW-ME or SICK-FOR-A-LONG-TIME-OVER-AND-OVER-AGAIN (Lane, 1993), creating the impression that words have been left out.

The result of the non-English syntax of ASL is that Deaf individuals often read at about a 4.8 grade level, which is not related to intelligence (Jacobs, 1986). It is therefore apparent that the low reading level and the translation of items from English into another language are enormous reliability and validity problems for assessing Deaf clients.

The importance of sign language to the Deaf community has a special significance for researchers. There are several signed systems used in the United States today, ASL, as already noted, is a complete language. Pidgin Sign English (PSE) is a mixture of ASL and English syntax, Signed Exact English (SEE), which is English syntax put into signs. An analogy among the English based sign systems similar to Hispanics from New York, San Antonio, and Los Angeles, who may all speak Spanish, but have difficultly understanding those from another region. Deaf people may prefer a sign system other than ASL, or may use these in combination, depending on how they were educated and when they became deaf. To make matters much more confusing, some Deaf people say they are using ASL, but they are actually using PSE (personal

communication, M. Torres, June 28, 2003). In short, the Deaf are not linguistically homogenous (Lane, 1993). This also presents difficulties for those who wish to develop "standardized" screening and diagnostic instruments for the Deaf.

SOCIALIZING. Deaf individuals will go to what seems to be great lengths to get together. Since most Deaf people are isolated all day, it makes sense that they value the company of others where communication is easy (Jacobs, 1986; Lane, 1993; Padden, 1980). They will show up at sporting events they are not participating in just to chat with other Deaf people. For the researcher, this brings up three points. First, socializing is highly valued by Deaf people and in order to conduct research, the researcher must expect more "chatting" for rapport development than with hearing populations. Second, Deaf individuals are aware of what is happening in the Deaf community. Therefore, trying to obtain a random sample would mean excluding some people. The result would likely be the entire group would refuse to cooperate (Lipton & Goldstein, 1997). Third, the participants are likely to know each other, and therefore possibly contaminate the research.

RESIDENTIAL SCHOOLS. Residential schools are enormously important to the Deaf because they are usually the first introduction into the Deaf community. Residential schools were started in America about 1817 and continue today (Lane, 1993). The students live in dormitories and return home on the weekends (Padden & Humphries, 1988). All of the staff sign. During the evening social activities students get their first introduction to other Deaf people and the ways of the Deaf (Padden & Humphries, 1988). No longer forced to use English like in the classroom, the students play ASL games at night. The unstructured time in the dorm affords an opportunity of true learning

for the students (Lane et al., 1996; Padden & Humphries, 1988). However, many Deaf people are mainstreamed into hearing schools with interpreters. They may develop identities as a Deaf person later. For example, individuals who were mainstreamed may or may not use ASL well and may not share the same values as the Deaf community. Again, it is not enough to know that an individual is "deaf," as many other factors impact his or her language and identity development. Researchers need to inquire about the type of schooling as it could affect results.

CUSTOMS. While there are many customs in Deaf culture, three are noteworthy for the researcher because of the way they influence data gathering and scale development. The first is use of eye contact. In Deaf culture, it is considered rude to break eye contact with a Deaf person because it appears that the watcher is uninterested (Padden, 1980). Second, while hearing people are restrained in their facial expressions, Deaf people use facial expressions as part of grammar and inflection (Padden, 1980). To a hearing person, a Deaf person may appear more "excited" or even "manic" when actually they are just Deaf (McEntee, 1993; Vernon & Miller, 2001). Hearing researchers must understand what is "normal" for Deaf individuals based upon their culture in order to document disorders.

Finally, it is necessary for the researcher to note how introductions are made in the Deaf community. The inclusive community enjoys making links between people. Therefore, when introducing oneself in Deaf culture, it is customary to give first and last name as well as where one grew up and went to school (Lane et al., 1996; Padden, 1980). The Deaf community values informality, and researchers tend to be "professional," which is marked by an air of formality and maintaining clear boundaries.

This simply won't work when interviewing the Deaf (Lane et al., 1996). In order to gain the trust of any minority group, one must show a familiarity with their customs as a way to establish rapport because it ultimately yields better information (Pinderhuges, 1989).

MINORITY STATUS AND HISTORY OF OPPRESSION

Hearing society pathologizes Deaf people's inability to hear, instead of focusing on their unique culture, language and history of oppression (Lane, 1993; Lane et al., 1996; Padden & Humphries, 1988). Deaf people do not feel it is their hearing loss that is problematic, but rather their status as a minority group (Jacobs, 1986; Lane et al., 1996; Padden & Humphries, 1988). According to Jacobs (1986), "The minority group status of the deaf is producing more numerous and greater problems than the handicap itself" (p. 19).

The minority status of the Deaf has been compared to other groups such as African-American, Chicanos and American Indians. Like other minorities, they suffer from unemployment and underemployment, poor social adjustment and poor public image (Jacobs, 1986). Hearing people view Deaf people as belonging to a "Deaf ghetto" or the "Deaf subculture" (Jacobs, 1986; Lane et al., 1996). As with other minority groups, the inclusiveness of the Deaf community may be one way to deal with discrimination and oppression (Pinderhuges, 1989). The term "Deaf" to a Deaf person means "inclusion in the group," sharing the same language, values, history and beliefs. Deaf people use the term "hearing" to mean "them" (Padden & Humphries, 1988). It is

interesting to note that the sign for "hearing" is also the sign for "public." The child who attends "public school" is assumed to be attending "hearing school."

Unlike hearing society, Deaf culture does not consider Deafness as a handicap (Lane et al., 1996; Padden & Humphries, 1988). The alliance with groups represented by individuals with disabling conditions has been a recent and uneasy one and has come about as a way to gain entry into laws which protect services and accessibility (Padden & Humphries, 1988). Although the Deaf do not feel handicapped, they are painfully aware that hearing people view them as "impaired" (Higgins, 1980). Hearing society, using its own value base, still places pressure on the deaf person to learn speech, unaware that this is a form of oppression. Corker (1994), a Deaf psychotherapist, notes "Just as there are different kinds of racist behavior, there are different kinds of linguistic oppression…" (p. 44).

More blatant forms of oppression of Deaf people exist, such as economic oppression. Deaf individuals are often passed over for job promotions, asked to train a hearing person who later becomes their boss or told to forgo college in favor of trade school (Higgins, 1980). One study indicated that over a 40 work period, Deaf individuals with high school diplomas earned $609,705.00 less than hearing counterparts. For college educated Deaf, those with a BA degree earned $469,104.00 less than hearing counterparts and those with an MA degree earned $365,404.00 less (Welsh, 1991).

A cultural model of Deafness is the conceptual framework for this dissertation. Interestingly, while sociology, anthropology and linguistics have written at length about the cultural model of Deafness, the field of mental health lags far behind. The classic therapy texts on cross-cultural counseling, such as Sue and Sue's (1990) Counseling the

Culturally Different, McGoldrick, Pearce and Giorando's (1982) Ethnicity and Family Therapy and Pinderhuges' (1989) Race, Ethnicity and Power make no mention of Deaf clients, nor even of clients whose primary language is not English. In order to be effective with clients of different cultures, professionals must have a good understanding of the cultural features of that group (Pinderhuges, 1989). This includes how the culture views themselves. Without a shift from the medical model to a cultural model of Deafness, mental health practitioners will continue to oppress Deaf people and be a hindrance to quality mental health and substance abuse programs (Alexander, 2003).

COUNSELING DEAF CLIENTS

Given that it is difficult to estimate the size of the Deaf community, it is even more difficult to estimate the incidence of mental illness and substance abuse in the Deaf population (Lane, 1993; Steinberg, 1991). Assumptions are that the incidence of mental health problems in the Deaf community is the same as among hearing individuals (Lane, 1993; Lane et al., 1996; McEntee, 1993), but no one really knows.

It is estimated that 90% of Deaf mental health needs go unmet (Steinberg, 1991). In one study, half of the Deaf individuals interviewed could not locate accessible mental health services (Steinberg et al., 1998). Deaf people are not as likely to seek mental health services, and they receive grossly inadequate services when they do (Freeman, 1989; Freeman & Conoley, 1986; Steinberg et al., 1998). The availability of mental health services are so scarce that Lane (1993) wrote, "Heaven help the deaf man or woman who is really mentally ill; earthly help is not likely to be forthcoming" (p. 55).

In addition, little research exists on mental health topics related to deafness. The professional literature focuses upon either vocational or educational topics (Freeman & Conoley, 1986; Steinberg et al., 1998), or offers only treatment recommendations without empirical support (Steinberg et al., 1998). The reason for the lack of data regarding treatment of Deaf clients stems from the few services that are available (Jacobs, 1986).

Worse is the scarcity of substance abuse programs for the Deaf. As with mental health statistics, there are no reliable estimates of the numbers of Deaf people who may have a substance use disorder (Guthmann & Sandberg, 1995; Steinberg, 1991; Sylvester, 1986). Some studies report that substance use disorders occur at the same rate as hearing populations, and others report that the rate is higher (Guthmann & Blozis, 2001; Sylvester, 1986; Whitehouse et al., 1991). Programs serving Deaf individuals who have substance use disorders are nearly impossible to find (Guthmann & Sandberg, 1998; Hetherington, 1979; McCrone, 1982; Sylvester, 1986; Whitehouse et al., 1991). Programs that attempt to serve the Deaf by mainstreaming into hearing programs usually do not provide the legally mandated equipment such as TTYs and interpreters (Guthman & Sandberg, 1995; Whitehouse et al., 1991). One study reports that 72% of the responding mental health agencies said that they served deaf clients, but only 25% had used certified interpreters, 61% had no TTYs and none had Deaf staff (McEntee, 1993). Few programs earmark monies for staff trainings or staff that are knowledgeable in sign language and substance abuse treatment (Guthmann & Sandberg, 1995).

In addition to the dearth of information on the numbers of Deaf substance abusers, few articles explore the topic empirically; the articles contain treatment recommendations without empirical support for their claims (McNeece & DiNitto, 1998).

The only exception to this is a study done by epidemiologists Lipton and Goldstein (1997) who attempted to measure the extent of chemical abuse by Deaf people using video technology. Because of the many communication barriers they encountered, they creatively used video technology that allowed the user to choose ASL or Signed English format, while simultaneously showing the words through speech reading and via captioning. By administering the questionnaires via diskette, they were able to standardize the administration of the screening, while allowing the Deaf person more choice of the language he or she preferred. Among the problems encountered were that more educated Deaf people wished to speed the videos up and the less educated Deaf people wished to slow the videos down. Some participants did not understand finger spelled words for some types of drugs and a number of phrases in the questionnaires did not translate as expected. "Are you finished with high school?" translates as "Are you done with high school?" when a better interpretation might be "Did you graduate high school?" The ASL would incorporate miming moving a graduation tassel from left to right and then signing, "FINISH?" (D. Dittfurth, Personal Communication, January 12, 2004). From a sample of 362 Deaf individuals, Lipton and Goldstein reported preliminary findings, such as 25% of respondents report using marijuana in the past month, 49% report knowing a Deaf person who drinks to excess, and 34% know a Deaf person who uses cocaine or crack. However, they also note that 50% of the respondents report that the video technology was confusing.

The Deaf community is a closed and exclusive one, which stems from years of oppression and frustration at dealing with the hearing world. There is enormous peer pressure to keep problems among the members of the community and not seek outside

help (Guthmann & Sandberg, 1995; Hetherington, 1979). Therefore, Deaf individuals are less likely to disclose their problems with substance abuse because of fear of another stigma of being "deaf and drunk" (Boros, 1981; Guthmann & Blozis, 2001; McCrone, 1982; Sylvester, 1986; Whitehouse et al., 1991). When Woodward (1980) asked Deaf individuals to only show him signs for drug behaviors so he could create a book for interpreters, they refused, for fear of being labeled in the Deaf community. Researchers and professionals treating the Deaf are usually hearing, which heightens the distrust (Guthmann & Blozis, 2001).

The Deaf community has less awareness and education about substance abuse. Education materials used in school are not as available in sign language as they are for hearing children, and Deaf people do not have access to the information provided by the mass media. The inability to identify and understand the risks associated with substance abuse is costly to the Deaf community (Guthmann & Sandberg, 1995; McCrone, 1982). Another factor that inhibits Deaf individuals from addressing substance abuse is the extensive network of Deaf people and inability to recover from one's past in the Deaf community (Guthmann & Sandberg, 1995; Higgins, 1980; Lane et al., 1996). Admitting a substance abuse problem may destroy that person's reputation in the Deaf community, which could be a barrier to getting help (Boros, 1981; Guthmann & Blozis, 2001). Higgins (1980) describes a situation in which

> A deaf woman, whom I interviewed twice at length, drew me aside at a club for the deaf. Rather than sign to me within the main room, we moved to a hallway that lead to the restrooms. She needed to explain to me about her husband's drinking problem and did not want others to *oversee* her. (p. 73)

In order to maintain sobriety, one must usually disassociate from previously "using" friends. In many communities, the Deaf group is relatively small and ending friendships could exacerbate an already isolated situation (Guthmann & Blozis, 2001). The lack of Deaf sponsors as supports and role models can amplify the sense of isolation (Guthmann & Blozis, 2001; Sylvester, 1986; Whitehouse et al., 1991).

COMMUNICATION. By far, the most common complaint of Deaf people seeking treatment is problems with communication (Corker, 1994; Dickert, 1988; Freeman & Conoley, 1986; Glickman, 1996; N. Glickman & Zitter, 1989; Guthmann & Sandberg, 1998; Lane, 1993; Lewis, 1996; McEntee, 1993; Roe & Roe, 1991; Steinberg, 1991; Vernon & Miller, 2001). Steinberg, Sullivan, and Loew (1998) conducted a study of Deaf participants and found the reported chief barrier to mental health services was communication. Other studies of service providers show that between 40-49% of providers who work with the Deaf sign poorly or cannot sign (McEntee, 1993).

Language is the vehicle for therapy, and miscommunication has dangerous consequences (Glickman, 1996; Steinberg, 1991; Vernon & Miller, 2001). Without clear communication, the untrained hearing professional risks misdiagnosis (Corker, 1994; Dickert, 1988; Glickman, 1996; Lane et al., 1996; Steinberg et al., 1998). Numerous cases have been documented of Deaf people who were misdiagnosed as mentally retarded or mentally ill and subsequently institutionalized (Lane, 1993; Lane et al., 1996; McEntee, 1993). Misdiagnosis of a mental illness may result in treatment with a variety of needless or even harmful medications (Dickert, 1988).

Professionals who are unaware that sign language is not an English derivative can not understand why Deaf clients cannot participate in therapy by writing notes or why

they might have difficulty filling out basic paperwork (Lane et al., 1996; Steinberg, 1991). Often, the professional blames the Deaf individual for being difficult or mentally deficient, instead of viewing communication as a joint problem. The result is that client's level is underestimated, sometimes severely (Corker, 1994; Dickert, 1988; Glickman, 1996; Glickman & Zitter, 1989; Jacobs, 1986; Lane, 1993; Lane et al., 1996; Steinberg, 1991).

Freeman and Conoley (1986) examined deaf students' counselor preferences based upon the independent variables of manual communication verses use of an interpreter, type of counseling degree, and years of experience. Participants viewed counselors who signed more favorably than counselors who used an interpreter. The researchers link the ability to communicate with the Deaf client a possible indicator of more effective treatment, but did not examine how sign fluency impacts treatment outcomes.

Miscommunication can occur when the terminology used in the mental health and substance abuse treatment field has no direct translation in ASL, such as the word "blackout" (Guthmann & Sandberg, 1988). As already noted, substance abuse signs, like all signs for covert behaviors, have regional variations. For example, in one study, Deaf participants showed researchers six different signs for the word "hangover" in two nearby southern cities. In addition, Deaf individuals do not understand substance abuse screenings created for hearing populations because of their inability to understand written English. Twenty-six Deaf individuals were asked about their understanding of items from two widely-used screening instruments, the CAGE and the AUDIT. Deaf

participants reported difficulty with both instruments, with some words problematic for 88% of participants (Alexander et al., 2005).

CULTURE AND MENTAL HEALTH. Since so few counselors know sign language, Deaf individuals who need counseling must use interpreters. However, using an interpreter creates new problems. First, because the professional is less likely to have experience with Deaf culture, the professional uses a hearing framework to make diagnoses (Glickman, 1996; Roe & Roe, 1991; Vernon & Miller, 2001). Behaviors that might be inappropriate for hearing individuals may be healthy and adaptive in Deaf culture (Glickman, 1996; McEntee, 1993; Vernon & Miller, 2001). Examples of differences between Deaf and hearing cultures include eye contact, facial expression, interpersonal distance, greeting and parting, politeness, privacy and confidentiality, (Corker, 1994; Lane et al., 1996; Padden & Humphries, 1988; Steinberg, 1991; Vernon & Miller, 2001). Clinicians' interpretations of these behaviors can affect diagnosis (Glickman, 1996; Lane et al., 1996; Steinberg, 1991; Steinberg et al., 1998; Vernon & Miller, 2001). To hearing professionals, Deaf people can seem aloof because of their closed culture (Higgins, 1980; Padden & Humphries, 1988). Deaf clients often have different therapy priorities than hearing professionals because some Deaf people arrive late, run over the session time, don't focus on any one topic and do not give information in a linear manner (Corker, 1994). However, this does not mean that they have poor boundaries or have low investment in treatment. It just means that they are Deaf (Corker, 1994).

One factor that does not get enough attention by mental health therapists is the Deaf "coast to coast grape vine." Vernon and Miller (2001) note "Because the Deaf

community is so small, confidentiality is a huge issue" (p. 433). Limited privacy in the Deaf community is one of the strongest reasons Deaf people are reluctant to use services (Higgins, 1980; Jacobs, 1986; Lane et al., 1996; Padden & Humphries, 1988; Vernon & Miller, 2001).

INTERPRETERS IN MENTAL HEALTH SETTINGS. Many professionals wrongly believe that using an interpreter is sufficient to close the communication gap, but "[c]linicians should never assume that the presence of an interpreter ensures adequate communication" (Steinberg et al., 1998, p. 984).

Counseling is used to describe all type of helping, professional, paraprofessional and volunteer. The same applies to interpreting – it may be done by a certified professional, a family member, or someone who knows little sign language (Corker, 1994). It is widely believed that a deaf client is best served by a qualified therapist who uses sign language (Corker, 1994; Glickman, 1996; Lewis, 1996; Roe & Roe, 1991; Steinberg et al., 1998). Given that this is not always a possibility, the second option is a qualified interpreter (Corker, 1994; Glickman, 1996; Lane et al., 1996; Roe & Roe, 1991; Steinberg et al., 1998).

Interpreters have a range of skill levels and may not always be professionally trained (Corker, 1994; Roe & Roe, 1991; Steinberg et al., 1998). Although sign language interpreters do provide accessibility to services for deaf clients, many professionals are unaware that interpreters can also create barriers (Glickman, 1996; Lane et al., 1996; Lewis, 1996; Roe & Roe, 1991). The problems fall into two categories. The first concerns translating information from one language to another. The therapist can not be sure if the information was conveyed accurately, especially if the underlying intent, such

as that of caring and concern, was lost in translation (Glickman, 1996; Roe & Roe, 1991; Vernon & Miller, 2001). Therapists may be alarmed when the interpreter seems to be saying more than the therapist said, called "expansion," when there is no ASL sign for an English word. Vernon and Miller (2001) note, "For example, the term 'self-esteem' can not be used with undereducated deaf individuals unless the meaning of the term is first explained in depth" (p. 429).

The interpreter can also convey less than the therapist intended because interpreters are not trained mental health professionals, aware of the nuances and many layers of the therapy session (Glickman, 1996). Even with highly skilled interpreters, nuances of language can be lost (Freed, 1988), such as words with double meanings, Freudian slips, and plays-upon-words. This author once treated a deaf teen-age girl who was preparing to testify in court after a sexual assault. When asked if she was afraid of testifying, the client indicated that she felt prepared, signing "I am brave." The sign for "brave" is also the same sign as "heal" and "strong." Thus, the sentence also had the multiple meanings, "I am healing," and "I am strong." An interpreter could not have captured the complexity of that sentence. Also, consider that it is difficult enough to accurately interpret when the client is feeling well and wants to be understood (Glickman, 1996); it can be virtually impossible when the client is psychotic, combative, or abusing substances.

The other group of problems with sign language interpreters concerns how they change the therapeutic relationship. Interpreters create a power shift in the therapeutic relationship. Interpreters in treatment settings "…can be an object of both patient transference and therapist counter transference" (Glickman, 1996). Even if deaf clients

accept interpreters in other settings, they often resent them in mental health counseling (Glickman, 1996; McEntee, 1993; Roe & Roe, 1991; Stansfield, 1987). Deaf clients already have a high degree of distrust of mental health professionals, and the common language shared by the interpreter and therapist can heighten the distrust (Glickman, 1996; McEntee, 1993; Roe & Roe, 1991; Stansfield, 1987). Also, it is not uncommon for deaf clients and interpreters to already know each other outside of the treatment setting, which could cause the client to hold back information (Padden & Humphries, 1988; Roe & Roe, 1991). The client may also withhold information if the topic is emotionally charged and they feel the that interpreter is too young, the wrong ethnic background, or the wrong gender (Glickman, 1996). Finally, some interpreters are only skilled at translating voice into sign. They are less skilled at translating sign into voice, making the Deaf person appear to be less intelligent than they actually are (Lane et al., 1996).

There are special difficulties in interpreting when the concern is alcohol or other drug problems. The signs for drug use are not common ones taught in interpreter training programs. The interpreter's lack of the required specialized vocabulary may also prevent Deaf individuals from discussing their drug or alcohol experiences (Guthmann & Sandberg, 1995).

PROFESSIONAL BIAS AND TREATMENT OF THE DEAF. Stereotypes and misconceptions of the Deaf still abound with mental health professionals, thus it is understandable that Deaf people avoid hearing professionals who would pathologize them even further (Boros, 1981; Lane et al., 1996; Steinberg et al., 1998). Professionals are completely unaware that Deaf people are not simply hearing people who can not hear (Lane et al., 1996; McEntee, 1993; Vernon & Miller, 2001). In fact, one of the job

stressors listed by interpreters is "interpreting for a psychologist who knows nothing about deafness but thinks he or she knows everything and is crude or is insensitive to deaf people" (Vernon & Miller, 2001, p. 432). Their ignorance is simply dangerous, as indicated by a provider who reported in a survey that it is possible to obtain sign language fluency after just one course (McEntee, 1993).

Lane's (1993) review of mental health literature over a twenty-year period and recording characteristics attributed to Deaf people from 350 articles to demonstrate professional bias against the Deaf. After data reduction to eliminate the redundant terms, he divided the characteristics into roughly four aspects: "Social" "Cognitive" "Behavioral" and "Emotional." Although the articles purport to be scientific, and therefore impartial, the labeling of Deaf people was highly charged and only negative. Interestingly enough, the characteristics were also conflicting, depending on which article was reviewed, such as "detached" and "passionate, " "explosive" and "shy."

Dickert (1988) conducted a study of 80 mental health professionals, matching 40 professionals on a specialized deaf unit with the general psychiatric staff. Randomly assigning the word "deaf" to about half of the cases, he asked for treatment recommendations, need for supervisory care and attitude toward the patient. Among other things, he found that adding the word "deaf" to the case study for the general staff resulted in "…recommended higher dosages of medication for three of the deaf patients described…as compared with their hearing counterparts…" (p. 274). This suggests that mental health professionals unfamiliar with deaf clients were more like to restrict, misdiagnose, and over-medicate deaf clients.

Lipton and Goldstein (1997) encountered numerous obstacles when they attempted to measure the extent of substance abuse in the Deaf community. In total, they listed nine barriers, eight of which were directly related to communication. However, instead of listing the communication problem as a limitation of the hearing researchers, they described it in the following single sentence: "For the hearing researchers it has been a discovery of a parallel universe – a distinct culture with its own very different and rich language, adjacent to the hearing world, but in many fascinating ways, quite different and demanding – of a cultural competence level we did not anticipate" (Lipton & Goldstein, 1997, p. 738).

In a study of substance abuse agencies in Illinois (Whitehouse et al., 1991), the researchers made a list of comments about how providers served Deaf substance abusers:

> "We refer them out." (When asked where…) "We don't know."
> ("How did you communicate with these clients?") "We spoke louder."
> "We gave them hearing aid batteries and wrote."
> "One counselor fumbled with sign language."
> "They could write, so the staff did not have to change their communication mode."
> "The process of working with these people was laborious for both clients and staff." (p. 109)

The last point seems to capture the essence of the problem. Working with the Deaf substance abuser is laborious if you do not know ASL and it is easier to not deal with Deaf clients (Hetherington, 1979; Sylvester, 1986). Finally, note that it is not enough to be a Deafness professional or a substance abuse professional. One must have training in both domains in order to be successful (Boros, 1981; Sylvester, 1986).

TESTING DEAF INDIVIDUALS

Tests that are normed for hearing populations are inappropriate for the Deaf because of language and cultural differences (Brauer, 1992; Freeman, 1989; Lane, 1993; Lane et al., 1996; Vernon & Miller, 2001). The biggest barrier to testing Deaf individuals is the difference in languages (Higgins, 1980; Jacobs, 1986; Lane et al., 1996). Items do not translate neatly from English into ASL and often do not have norms for ASL users. Limited reading skills make written tests a poor option for many deaf test takers (Brauer, 1992; Jacobs, 1986; Lane, 1993). Also, depending on whether the individual grew up using oral verses sign language, when they became deaf (before or after language acquisition), when they were diagnosed as deaf and the type of schooling they received, he or she might not have the richness of language needed for abstract expression, making self-expression more concrete (Jacobs, 1986).

Oral versions of tests do not have the same psychometric properties as written ones (Lane, 1993; Lane et al., 1996; Spector, 1992; Vernon & Miller, 2001), and it is fair to say that tests given via interpreter fall under this category. If a test is administered through an interpreter, the dimensions of the test are altered because interpreters vary in their skill level. Even highly skilled interpreters will provide somewhat different translations of the same concept.

The other barrier to psychometric testing of the Deaf involves the items themselves. Many items written for hearing populations are not appropriate for the Deaf. Consider MMPI questions such as “I would like to be a singer” and “At times I hear so well it bothers me” (Lane et al., 1996). Freeman (1989) provides a complete review of cognitive and personality tests that are biased against the Deaf.

One study attempted to determine if the way 38 items on the MMPI were signed could impact the outcomes of the test. The study had two native Deaf signers, one with a "flamboyant" style and the other with a "professional" approach. Deaf participants took the MMPI twice on the same day, but the items were administered in different orders. Of the 38 items tested, 32 items were "…comprehended as similar in meaning even though rendered by dissimilar signers" (Brauer, 1992, p. 391). The author lists the small sample size and the possibility of memorization of the answers as possible limitations of the study. However, she did uncover signer effects for sensitive topics. For example, a participant who self-identified as an alcoholic reported feeling defensive at the accusing way the flamboyant signer stated the item "You have used alcohol excessively." Therefore, it is necessary to sign sensitive items professionally and in a straight-forward non-judgmental way. Also, many Deaf people were confused by the item, "Someone has been trying to poison you" because the ASL translation was unclear if "poison" related to "bad-mouthing" or literal poisoning. Thus, it is imperative to write items that translate clearly and to seek feedback from participants about possible confusion.

A team of three individuals attempted to translate the National Institute of Mental Health Diagnostic Interview Schedule (Q-DIS-III-R), in order to create a computer version that could be used with Deaf individuals. Six disorders were selected because of their prevalence: generalized anxiety, simple phobia, agoraphobia, bipolar disorder and major depression. Using back translation and deaf focus groups, the team attempted to reach culturally appropriate matches for the items for the Q-DIS-III-R. Concepts involving time, such as, "Have you experience [insert symptoms] for one month or more during the past year?]" were difficult for Deaf individuals at all levels of education to

grasp, and the Q-DIS-III-R had numerous idioms that required cultural translation. However, the team found that a Deafness specialist could overcome the limitations of the Q-DIS-III-R, and planned to implement another phase to continue to develop a computerized version to the screening (Steinberg et al. 1998).

REVIEW OF ALCOHOL SCREENING SCALES

INTRODUCTION. Alcohol screening scales have been developed as a quick way to determine the need for a more detailed substance abuse assessment. There are a number of screening tools available, each with its own psychometric properties. All scales are designed to be based upon client self reports, and therefore are not appropriate for clients who are motivated to hide their behavior or who are in denial (McNeece & DiNitto, 1998).

THE CAGE. Perhaps the best known screening tool is the CAGE, developed in 1968 by Ewing (Ewing, 1984). The CAGE is widely used by family physicians and nurses because it is simple to remember and easy to score. CAGE is a mnemonic for the tool's four questions: 1) Have you ever felt you ought to Cut down on your drinking? 2). Have people Annoyed you by criticizing your drinking? 3) Have you ever felt bad or Guilty about your drinking? 4). Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (Eye opener)?

The CAGE was developed in 1968 as a fast, nonincriminating way of screening for alcoholism. Using 130 randomly sampled patients in a hospital, the developer found that sixteen had been diagnosed as alcoholic by their physician. Ewing (1984) reports that he contrasted the responses of these 16 patients with the responses of those not

diagnosed with alcoholism to "…find the minimum number of questions that would usefully divide the responders into two groups. [The number of questions] proved to be four, which were placed in a new order to permit the use of the mnemonic CAGE" (Ewing, 1984, p. 1906). There are two problems with Ewing's approach. First, the study only captured those who were "clearly identified as suffering from alcoholism by their own physician." Therefore, those who abused alcohol or who were in the early stages of alcohol dependence may have been overlooked. Second, Ewing does not describe the participant characteristics, which gives us no indication of the gender and demographic backgrounds of his sample. Finally, a sample size of 16 is small. In the same article, Ewing goes on to say that he repeated the same study in London (N = 48), in which all of those with the diagnosis of alcoholism answered "yes" to at least two of the questions.

Building upon the work of Ewing, Mayfield, McLeod and Hall (1974) validated the CAGE on a convenience sample (N = 366) at a VA hospital. The clients were given the CAGE and their scores on the CAGE were compared with their diagnosis. The alcoholism diagnoses correlated with the items on the CAGE as a whole. Three of the questions "Cut down," "Guilty" and "Eye-opener" showed correlations between .83 and .88. "Annoy" had a lower correlation coefficient at .60; the authors speculate that this is because 50% of the clients answered it affirmatively. It is significant that the population was almost entirely male (99%), and mostly Caucasian (77%), raising generalizability questions for female and minority populations. More discussion about the CAGE with females and minorities ensues in the following sections.

The CAGE screens for alcohol dependence, and therefore is not a good test to use for people who only misuse alcohol (Buchsbaum, 1995). A cut off score of 2 has

traditionally been used to indicate alcohol abuse (Bradley, Boyd-Wickizer, Powell, & Burman, 1998; Buchsbaum, 1995; Ewing, 1984, 1998). In a letter to the editor, Ewing (1998), writes that he "…regrets[s] the development of any such tradition" as the CAGE was meant to be used in the larger context of an overall medical history exam. While Ewing and Steinweg (1993) believe that the CAGE functions best when not preceded by quantifying amounts of alcohol consumed, Buchsbaum (1995) suggests administering the CAGE if the weekly average number of drinks exceeds more than seven. Buchsbaum et al. (1991) also recommend differing cut off scoring depending on the population, such as for women. Sometimes one positive response is used to suggest the need for further assessment.

Ewing (2000) reports that the principle studies of the psychometric properties of the CAGE have been on the sensitivity and specificity of the cut-points.

MAST. The Michigan Alcoholism Screening Test, developed by Selzer (1971), is comprised of 24 yes/no questions and was originally validated on an all-male sample. Some questions earn a differing number of points for a response than others. The MAST is one of the longest of the screenings at twenty minutes to complete (Kitchens, 1994). Shorter versions have been validated, including the 10 questions Brief MAST (BMAST), and 13 question Short MAST (SMAST) (Kitchens,1994).

Selzer (2000) reports that one study of the MAST reported high test-retest reliability coefficients (.85-.97) when tested on a inpatient sample. Cronbach's alpha over nine studies of the MAST ranged from .83 to .95. Kitchen's review of the MAST reports sensitivities ranging from 71% to 100% and specificity of 81% to 96%. The MAST was positively correlated with other indicators of alcoholism, such as the Alcohol

Dependence Scale and the DSM-III alcohol diagnosis (Selzer, 2000). See Appendix A for a copy of the MAST.

TWEAK. The TWEAK was created in 1994 to measure women's problem drinking during pregnancy. The concern was that while women were warned about the effects of drinking during pregnancy, providers had no way to screen and educate women. The creator also suggests that it can be used retrospectively to assess maternal drinking during pregnancy in order to help establish a diagnosis of Fetal Alcohol Syndrome (FAS) (Russell, 1994). Since women require lower cut-scores than men in most screenings (Bradley et al., 1998), and are less likely to engage in physical aggression as a result of their drinking as suggested in item nine on the AUDIT ("Have you or someone else been injured as a result of your drinking?"), it has been argued that the TWEAK is a more sensitive screening for women (Bradley et al., 1998; Russell, 1994).

Russell (1994) compared the TWEAK and T-ACE with the CAGE and the MAST in a sample of all-African-American, lower SES women. In 1999, using the TWEAK independently with a population more representative of those who were problem drinkers during pregnancy (white, middle class women), the TWEAK had the best predictive ability for both hazardous drinking and harmful drinking, while all three TWEAKs were equal in predictive validity for current alcohol use (Chang, Wilkins-Haug, Berman, & Goetz, 1999). Russell (2000) summarizes studies that use various cut scores. In a diverse clinical and non-clinical sample of males and females, a cut score of three resulted in sensitivity of .94 and specificity of .89. See Appendix B for a copy of the TWEAK.

AUDIT. The Alcohol-Use Disorders Identification Test (AUDIT) was developed by the World Health Organization in 1989. Unlike the CAGE, which best identifies those with alcohol dependence, the AUDIT can distinguish between what they term "hazardous drinkers," those who are at risk for developing psychological or chemical problems related to alcohol and "harmful drinkers," those who have an alcohol problem. The benefit is believed to be a proactive stance towards alcohol – identifying hazardous drinkers before they become harmful drinkers (Saunders, Aasland, Amundsen, & Grant, 1993).

The AUDIT was developed in conjunction with six countries, Australia, Bulgaria, Kenya, Mexico, Norway and the USA. The developers sought to find domains that would represent alcohol problems across cultures. As a result, the AUDIT is available in several languages, and is reported to measure consistently across cultures (Saunders et al., 1993).

The AUDIT has three domains: alcohol intake (questions 1-3), alcohol dependence (questions 4-6), and negative consequences (questions 7-10). It can be used in a variety of ways, including as a stand-alone test or as part of a general physical exam. It is brief, takes only two minutes to score, and can be given orally, written or as a paper and pencil test (Allen, Reinert, & Volk, 2001).

Although the AUDIT only takes two minutes to complete, there have been attempts to create a five question AUDIT, called the FAST, which only takes 30 seconds to complete. The creators of the FAST found that through principal components analysis, question #3 of the AUDIT, "How often do you have six of more drinks on one occasion?" could identify more than 50% of the hazardous drinkers with 97% accuracy in

most samples. Using AUDIT questions #8, "How often during the past year have you been unable to remember what happened the night before because you had been drinking?" #5, "How often during the past year have you failed to do what was normally expected from you because of drinking?" and #10 "Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?" successively, more than 93% of hazardous drinkers were categorized as hazardous drinkers measured by a score of 8 or higher on the full AUDIT scale (Hodgson, Alwyn, John, Thom, & Smith, 2002).

The only debate about the AUDIT seems to be in the cut-score. Various cut-scores have been suggested to maximize sensitivity while not compromising specificity (Allen et al., 2001). Many researchers have suggested that "optimal" is the cut-score of eight (Allen et al., 2001; Volk, Steinbauer, Cantor, & Holzer, 1997), while others have noted that cut-scores need to be altered in order to improve predictive value for women and minorities (Bradley et al., 1998; Volk et al., 1997). Determining appropriate cut-scores seems to depend largely on the sample or population of interest and what the clinician or researcher is trying to accomplish. According to Volk et al (1997), "The cut-point issue might best be considered in terms of where the clinician or researcher is willing to be wrong. A single cut-point for all settings and purposes may not be ideal" (p.204).

The AUDIT outperformed the TWEAK for under-age alcohol users, perhaps because the AUDIT measures hazardous use better than alcohol dependence symptoms (Kelly, Donovan, Kinnane, & Taylor, 2002).

In his psychometric review of the AUDIT, Babor (2000) reports that one study demonstrated AUDIT to have a Cronbach's alpha of .80. The AUDIT correlates with the MAST (r = .88), and has good construct validity due to its positive correlations with other measures of alcohol abuse or dependence, such as drinking consequences, attitudes and risk factors. See Appendix C for a copy of the AUDIT.

REVIEW OF SUBSTANCE ABUSE SCALES

INTRODUCTION. Substance abuse screenings have been developed based upon alcohol scales and share many of the same properties. Some substance abuse screenings include the use of alcohol, and others are only for drug screening. Like alcohol screenings, drug screenings primarily have been normed on Caucasian males, which affects the psychometric properties of the screening for women and minorities. The most common problem, as with alcohol screenings, is establishing the correct cut score for various populations. All drug abuse screenings need to be validated on minority populations in order to understand how the tool "behaves" with the new population.

DAST. The DAST (Drug Abuse Screening Test); (Skinner, 1982, 2000) was adapted from the MAST to measure substance abuse other than alcohol. The original version was 28 yes-no questions, but later a 20 question DAST was found to be as reliable as the former, with a correlation between the two being r =.99. The latter is sometimes referred to as the short-DAST, but not consistently throughout the literature. The possible scores range from 0 to 28, with the cut-score of five indicating the possibility of a drug disorder (Skinner, 2000).

The scale's developer reports that factor analysis reveals a unidimensional scale (Skinner, 1982), and other studies have supported this model, suggest that the scale diagnoses "a continuum of drug abuse" because of the Varimax rotation that identified five additional factors (Staley & El-Guebaly, 1990, p. 263). Their study supported the high internal consistency reported by Skinner (1982).

Studies which reviewed the use of the DAST with clients who were in treatment for substance abuse and a different general psychiatric population reveal Cronbach's internal consistency of .92 (Skinner, 1982) and .94 (Staley & El-Guebaly, 1990). The DAST is positively correlated with mental health disorders such as depression, anxiety and social deviation. Validity measures have focused on its sensitivity and specificity for detecting drug abuse. In one study, a cut score of five captured all of the respondents who had a substance abuse diagnosis without alcohol, and 91% of individuals who had substance abuse disorders, including alcohol abuse. However, the DAST appears to function less effectively for individuals who have only alcohol abuse (Skinner, 2000). Peters et al. (2000) studied how various alcohol and drug screenings functioned in criminal justice settings, which has both a high rate of substance use disorders and an overrepresentation of minorities. No screening has been designed especially for this setting. Using a sample of 400 male inmates, the researchers compared a number of screenings (DAST, MAST, ASI, SSI, SASSI-2, TCUDS and the ADS) to determine which would have the best sensitivity and predictive values for incarcerated populations. The researchers note that for inmates, the DAST had the second highest sensitivity of 88%. However, the positive predictive value of 64% was low, resulting in 34% of the individuals misidentified by the DAST.

CAGE-AID. The CAGE-AID is a newer and less well-known scale. It was created by Brown, Saunders and Papasouliotis in 1992 and incorporates questions about drug use into the original CAGE questions, so that the questions read as follows (modifications in italics): 1) Have you ever felt you ought to Cut down on your drinking or drug use? 2). Have people Annoyed you by criticizing your drinking or drug use? 3) Have you ever felt bad or Guilty about your drinking or drug use? 4). Have you ever had a drink or used drugs first thing in the morning to steady your nerves or get rid of a hangover (Eye opener)?

Brown and Rounds (1995) examined the performance of the CAGE-AID with other established alcohol and substance abuse measures, the SMAST, the SMAST-AID and the CAGE. In their study, the CAGE-AID was more sensitive than the SMAST-AID (the SMAST Adapted to Include Drugs), with sensitivities of .70 and .40 respectively. The study also examined the effects of different cut-points on the sensitivity of the CAGE-AID. When the cut score was 1 for patients who had both alcohol and substances use disorders, the CAGE-AID was more sensitive than the CAGE for most of the subgroups of alcohol and substance use disorders (e.g., abuses or dependent on alcohol and other drugs, abuses or dependent on one substance, abuses or dependent on two substances, abuses or dependent on three or more substances). When screening for alcohol abuse only, the CAGE and the CAGE-AID had similar results. However, the authors of this study anticipate that the CAGE-AID may be less sensitive than the CAGE because alcohol abusers do not wish to be viewed as substance abusers.

Brown, Leonard, Saunders and Papsouliotis (1998) studied the use of the CAGE-AID with a general medical population, ages 18-49. The data were collected over a two

year period to total 363 participants. Using a structured interviewed, the researchers established the presence of a substance use disorder based upon the DSM-III. Almost half of the participants had a lifetime history of substance abuse or dependence and 21.8% had a current substance use disorder. The authors report that the CAGE-AID was 70.9% sensitive and 75.7% specific for screening substance abuse disorders in this study, but offer no other statistical data on the CAGE-AID's performance.

Current substance abuse scales have been developed for individuals with addictive disorders, not for the multi-layered problems of individuals who have a psychiatric diagnosis. Dyson et al. (1998) compared commonly used substance abuse screening instruments, including the CAGE-AID, with 100 psychiatric inpatient adults. Nearly 70% of this population had an Axis I psychotic condition at discharge. The CAGE and the CAGE-AID were given upon admission and then given again 24-48 hours later to test for consistency. Reliability was measured using Cronbach's alpha internal consistency for the CAGE-AID taken at intake and the CAGE-AID taken while on the unit were .83 and .84, respectively. The authors feel this is satisfactory, given the length of the scale. In order to examine criterion validity, the patients were given other substance abuse scales later during their hospitalization, which were then compared to the CAGE-AID. Administering the CAGE-AID at intake yielded higher specificity and sensitivity for each cut-off point than when given on the unit. The authors note that this may be related to participant fatigue, as they were screened may times during this study. Overall, the CAGE-AID performed almost as well as the DAST and correlates with other drug screenings, (the DAST, the SMAST and the CUAD), but further testing of the instrument is needed. Its true benefit is that it is short and easy to use.

SUBSTANCE ABUSE SCREENING AND MINORITIES

Introduction. Many of the commonly used screening tests are validated on white male populations, easily accessible populations, in some type of out-patient medical clinic, and for a specific purpose, such as measuring chronic drinking (Cherpitel, 1999; Schafer & Cherpitel, 1998). As is the case with all scales, substance abuse screenings tend to be less sensitive for women and minorities. Women, people of color, and non-English speakers need scales that are created especially for their gender and culture (Russell, 1994; Saitz et al., 1999).

WOMEN. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommends six screenings as appropriate for women: BMAST, T-ACE, TWEAK, NET, AUDIT and CAGE (Bradley et al., 1998). Bradley et al. (1998) analyzed 13 articles, which used these screenings, in which gender could be analyzed separately. The most significant issue seems to be the lowered sensitivity for women resulting in the need for a lower cut-point for women.

Many studies find that alcohol screenings are less sensitive for women at equal cut points as men. According to Bradley et al. (1998), the CAGE has the greatest bias in regard to women, especially in white populations (Bradley et al., 1998). The TWEAK is also more sensitive for white women compared to African-American women than the CAGE or the AUDIT when traditional cut-scores were used (Bradley et al., 1998). They believe that "…screening questionnaires may be less sensitive for alcohol abuse of dependence among women than men, particularly screening questionnaires asking about alcohol consumption. Therefore, it may be necessary to use different cut point in women

than in men" (Bradley et al., 1998). The difference in cut scores for men and women has been supported by other researchers (Volk et al., 1997).

The CAGE-AID is similarly less sensitive for women. In their study of adults in a community medical center, Brown and Rounds (1995) found that the cut scores of the CAGE-AID influenced sensitivity for women. When the cut score was 2, the sensitivity for women and men were .65 and .75, respectively. When the cut score on the CAGE-AID was lowered to 1, the sensitivity widened to .72 for women and .88 for men.
A later study on the CAGE-AID (Brown et al., 1998) found that males had a significantly higher incidence than females in the categories of any lifetime substance use disorder, of drug dependence, of current dependence and current alcohol dependence. The significance is that the authors fail to discuss their findings in light of the evidence, and their own earlier work, that screenings perform less well for women. Therefore, the differences in gender may be non-significant for substance use disorders, once the screening cut-point have been adjusted for women.

PEOPLE OF COLOR. Alcohol screenings function inconsistently across ethnicities (Kelly et al., 2002; Schafer & Cherpitel, 1998). Bradely et al. (1998) found that three of the commonly used screening -- the TWEAK, CAGE, and AUDIT -- were more sensitive for alcohol abuse and dependence in African-American women when compared to white women (Bradley et al., 1998). Other studies have shown that white older adolescent drinkers score higher on the AUDIT than African-American older adolescent drinkers (Kelly et al., 2002).

Volk et al. (1997) studied the severity of the AUDIT and the Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDAIS) with 1333

participants, including whites, African-Americans and Mexican-Americans. Only a small part of the sample (30 participants) chose to conduct the interview in Spanish. The AUDIT consistently detected alcohol abuse in men and women across ethnic groups. Most cross-cultural studies on alcohol screenings focus on sensitivity and specificity, not on differential item function (DIF). When Cherpitel (1999) used logistic regression to test DIF in the commonly used screening tools -- CAGE, TWEAK, B-MAST and AUDIT -- she found that all of the screenings had either gender or ethnic DIF. She attributes ethnic DIF to cultural factors. For example, African-Americans scored more highly on question #5 on the TWEAK, ("Do you sometimes feel the need to cut down on your drinking?") and whites are more likely to have attended AA or have been hospitalized as a result of their drinking (Cherpitel, 1999; Schafer & Cherpitel, 1998).

Dyson et al.'s (1998) study compared the CAGE-AID with other screenings in an inpatient psychiatric population. This study should be noted for having a high number of African-American males (75%). As with all of the screenings, the cut-points are noted as to their effect on sensitivity and specificity. The authors do not suggest which cut-points would be most effective for this population.

NON-ENGLISH SPEAKING INDIVIDUALS. With the exception of the AUDIT, the commonly used screening tests have been created in English and not normed for non-English speakers (Cherpitel, 1999; Saitz et al., 1999; Schafer & Cherpitel, 1998). Therefore, it is questionable how well these tests work when translated into other languages. Perceptions of alcohol use and abuse are culturally based (Nelson et al., 1997; Saitz et al., 1999; Schafer & Cherpitel, 1998). For example, in some Spanish speaking countries, it is acceptable to consume large amounts of alcohol in a short period of time,

while abstaining from alcohol during the rest of the year, i.e., "fiesta drinking" (Saunders et al., 1993). Therefore, cut-score instruments may need to be adjusted in order to accurately measure alcohol abuse problems within the culture or new instruments may need to be developed (Schafer & Cherpitel, 1998).

For example, a group of researchers gave the CAGE to recent Vietnamese immigrants, and although a quarter of the sample admitted to alcohol use, none agreed to any of the CAGE statements (Nelson et al., 1997). Because of the language and culture of Vietnamese populations, the authors of this study encourage the development of several CAGE variations for "special populations." One study found that the Spanish CAGE (the 4-M) was a valid screening tool for alcohol use disorders for Latinos, with a score of 1 proving to be 100% sensitive for alcohol abuse or dependence. The CAGE (4-M) performed well across Latinos regardless of gender, national origin, acculturation, or education. The same study also reviewed the use of the AUDIT, as it is also currently being used in Spain, and found that the AUDIT was able to identify hazardous drinking in Latinos, but was not sensitive for long-term alcohol problems (Saitz et al., 1999).

The CAGE and the AUDIT, developed by the World Health Organization (Saunders, Aasland, Amundsen, & Grant, 1993), are commonly used alcohol screenings normed for hearing populations. Deaf participants in a recent study reported difficulty with these screening tools (Alexander, DiNitto & Tidblom, 2005). Deaf individuals reported not understanding a number of the CAGE words or phrases, such as the phrase "steady your nerves," which was unclear for 69% of the participants The AUDIT was more problematic, as 81-88% of participants did not understand frequently used English words such as "containing," "typical," and "occasion." Even though the AUDIT has

been successfully translated into many languages, it has an overall Flesch-Kincaid Reading level of 8th grade, which is too high for many Deaf individuals.

Like other minority populations, Deaf individuals need a scale that accurately measures substance abuse in their native language. The creation of a scale in ASL could begin to accurately identify Deaf individuals who need further assessment for substance abuse disorders. This would be a slight improvement to the patchwork of diagnostic and treatment services Deaf people currently receive. However, identifying Deaf individuals with a screening is only a first step, because those referred for further assessment and diagnosis do not have the supportive services needed to treat their substance disorder.

Chapter Three: Creating the DAAD

INTRODUCTION

Scales for Deaf individuals are challenging to create because of the non-homogeneity of the Deaf population. Written scales for the Deaf are useful only for those Deaf individuals who read well and understand hearing idioms. The usefulness of scales administered by interpreters vary widely, depending on the interpreter's skills, knowledge, and style. In order for a substance abuse screening to be standardized and not dependent on individual skill level of a sign language interpreters, the new scale must be recorded on video. This chapter outline items creation and selection, translation of scale items into ASL, creation of the video and webpage, and translation of the SCID.

ITEM CREATION AND SELECTION

In order to create the pool of items for the new scale, screenings in the public domain were reviewed for items that would be appropriate for Deaf populations. Screenings reviewed were the CAGE-AID, the MAST and the AUDIT. An item was considered appropriate for selection if it met four criteria: it related to Deaf substance abusers experiences, it was concise, it was not difficult to convey in sign, and it was dichotomously scored.

All CAGE-AID items met the criteria, and the researcher received permission to translate into ASL to validate. The only AUDIT items used were the dichotomous #9 ("Have you or someone else been injured as a result of your drinking?") and #10 ("Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?"). The researcher received permission from the World

Health Organization to include these two questions in the batch of items for expert review and from the creator of the CAGE-AID to translate the entire scale into ASL for validation.

Since the MAST contains items that are generally longer and more complex, than other screenings, many of the MAST items did not meet the four criteria for item selection. For example, #17 of the MAST ("Have you ever been told you have liver trouble? Cirrhosis?") was not selected because Deaf individuals often go to doctors without interpreters, and may not have a good understanding of medical conditions caused by drinking. Similarly, MAST item #21 ("Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem?") was not selected because it has been well documented that Deaf individuals are often misdiagnosed and wrongly involuntarily hospitalized. MAST item #22 ("Have you ever been seen at a psychiatric or mental health clinic or gone to a doctor, social worker, or clergyman for help with an emotional problem in which drinking had played a part?") is too wordy and would require even more expansion in order for it to be clearly conveyed in sign. The researcher received permission to translated selected items into ASL to validate.

In total, 26 items from existing scales were selected for the item list to be rated by the expert reviewers. The researcher wrote 24 additional items based upon her clinical experience, interviews with Deaf substance abusers, and information in the literature. Once written, the items were reviewed by a native signer in recovery to improve wording, make concepts clearer for the Deaf, and delete inappropriate items. All of the researcher's items met the same four criteria for item selection used for the existing

scales. The total list of fifty items was written in English, with plans to translate into subsequently ASL. The initial item list is in Appendix D.

EXPERT REVIEWERS

Once the initial items were selected, the 50 individual statements were printed on card stock and cut to 3 x 5 inch size to create a stack of cards. Five experts in substance abuse and Deafness were contacted by the researcher and asked to rate the items on a scale as to how well they capture the construct's domains. One expert, who is on the researcher's dissertation committee, is a licensed chemical dependency counselor, a certified interpreter, and works for the Texas Commission for the Deaf. The others are nationally recognized for their contributions to the field of Deafness and substance abuse. Two of the experts have written books on Deafness and substance abuse, one is a program director for a Deafness treatment program, and the final one is a faculty member at Gallaudet University, the only university in the world for the Deaf. Because the experts were not available in one location, the items were mailed to them.

Each reviewer was mailed a stack of statements cards. Enclosed was an explanation to sort the cards into three piles, using the following rating system developed by Hambleton (1980):

> -1 means it IS NOT a good question to diagnose substance use disorders in Deaf people
>
> 0 means UNSURE if a good question to diagnose substance use disorders in Deaf people
>
> 1 means it IS a good question to diagnose substance use disorders in Deaf people

After sorting the items into three piles and securing the piles, the reviewers mailed the items back to the researcher in a pre-paid envelope. An additional card was placed in the package with a request for any feedback. See Appendix E for the packet of information sent to reviewers.

REVIEWER FEEDBACK

The items drawn from the AUDIT, MAST and CAGE were already written in English. The researcher needed to be sure that her own items meet the four criteria of being related to a Deaf substance abusers experiences, concise, not difficult to convey in sign, and dichotomously scored. The researcher wrote her items in English, her native language, thinking how they might be signed in ASL. So, after writing each item in English, the researcher signed the item to herself and wrote the gloss. For example, the researcher wrote "Do you use drink/drugs to deal with stress?", but needed to be sure this English item could be translated into ASL concisely. The gloss is "INSIDE, STRESS-YOU. WHAT-DO? DRINK OR DRUG, RELAX, RESOLVE, YES OR NO QQ." Now the researchers items were in gloss, which was an advantage, because it would show the reviewers that the items could make sense in ASL. However, sending the English (non-translated) items from the AUDIT, CAGE and MAST to the reviewers mixed with the researcher's gloss items could create unnecessary confusion. In addition, some items could be favored over other items. Finally, the researcher's gloss could be improve by a native signer's interpretation of the item. Therefore, the researcher and a committee member decided to send items to the reviewers in English with the following statement:

"All items will be translated into ASL for the video" (D. Dittfurth, personal communication, January 19, 2004).

Item translation, however, is the key to the validity of the scale. Without an accurate and clear ASL translation of the items, the scale will not test the intended underlying construct with Deaf individuals. The reviewers had the same concerns. The common theme of the feedback centered on the ability to correctly translate the items and underlying construct. For example, one reviewer wrote, "My biggest concern is how these questions will actually be presented. You say there will be changes into ASL, but I feel many [items] will be very difficult to do without a lengthy explanation" (S. Shevlin, personal communication, February 17, 2004).

Two of the expert reviewers reported sorting their piles with colleagues. One sorted with three colleagues and another with one colleague. This is significant because Deaf culture values input and collective decision making from others (Lane et al., 1996). Sorting their card piles with colleagues follows Deaf customs. Their collaborative work further strengthens the construct validity of the scale, as the items received the benefit of input from nine Deafness professionals.

TALLYING THE ITEMS

To tally the items, a grid was created with four columns. The first column contained the item statement; the next three columns contained each possible item rating (-1, 0, or +1). As the packages were returned, the researcher filled in the tally sheet by sorting the stacks, and putting a check in the -1, 0 or +1 box next to the item, depending on how it had been sorted by the expert reviewer. This sheet indicated which items the reviewers agreed on favorably, which were not viewed favorably, and which items were

"split." Sixteen items were ranked +1 by four or more reviewers, and five items were given a +1 rating by all five reviewers, for a total of 21 items (see Appendix F for the tally sheet).

At this point, the items were still in English. It is one thing to have an item that conceptually "gets at" a Deaf substance abuser's experience, but quite another thing to be able to convey the concept in a visual-spatial language for a non-homogenous population with individuals who tend to minimize their problems. In order to determine the item's "signability," a team reviewed the tally lists for how well individual items could be translated into ASL. The team consisted of two hearing individuals and two Deaf individuals. The two hearing individuals were the researcher and the signing member from her dissertation committee. One Deaf individual is a mental health professional with training in substance abuse. The other is an ASL instructor at The University of Texas at Austin, who would also serve as the signer for the video.

The team went through the tally list together, signing each statement and discussing how it might best be translated into ASL. Some items were eliminated from the tallied list from the reviewers because they were too difficult to sign. For example, AUDIT item #10, ("Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?") a received +1 by four of the reviewers. However, once signed, the question was viewed as double-barreled because Deaf individuals usually have hearing relatives who can not communicate with them and doctors and other health care workers who probably do not use interpreters, but do have friends who can communicate. It was eliminated.

Items that were similar in content were combined to eliminate redundancy. For example, "I use drink/drugs to help me relax" received high marks from four out of five of the national experts, but was viewed as similar to "I use drink/drugs to deal with stress" once signed. Therefore, the two items were combined into "When you are stressed, do you use drinks/drugs to help you relax?"

After the final list of eighteen items was created, the team also made notes about the necessary ASL syntax for each item to be used when the video was filmed. Now that a final item list was created, the researcher received approval for the items from her dissertation committee and filed paperwork seeking permission from the Human Subjects Committee from the University of Texas at Austin's Institutional Review Board (IRB) to conduct the research with participants, (see Appendix G).

VIDEO CREATION

As discussed previously, administering any scale via interpreter creates variability, depending on interpreter skill level. Therefore, the scale must be standardized via videotape.

In order to get an idea of a video scale created for a Deaf population, the researcher contacted Barbara White, Dean of Gallaudet's School of Social Work. Dr. White created a video scale in 1999 for her dissertation and mailed a copy of the video to the researcher. As arranged, the researcher made a copy of Dr. White's dissertation video, which was filmed on VHS, and returned the original to Dr. White. The researcher reviewed the video in order to get a feel for the lighting, speed of signing, how participants were introduced to the concept of the video, and how participants were

directed to indicate their answers on the answer sheet (Dr. White's strategy was to have participants mark their answers on a sheet of paper during a blank space on the tape after each item).

Originally, the researcher planned to film on VHS, similar to Dr. White's video, but technology consultants advised against the use of VHS. Instead, consultants strongly supported digital video (DV) for several reasons. First, digital media is superior in picture quality. Second, there are many software programs that allow for editing the DV raw footage. Third, if other formats of the video are needed later [such as putting the screening on a compact disc (CD) or on a VHS], the DV could create these formats, but one can not create a quality CD from a VHS copy. Fourth, because editing would be easier with DV, the researcher could later easily edit out unwanted items if necessary. Fifth, using DV also results in the ability to load the video to a laptop, maximizing portability; a VHS version of the screening would require use of a television and VCR. Finally, once the scale has been validated, the digital format would allow the video to be shown via the internet (G. Folse, March 21, 2004, personal communication; K. Barnett-Gibson, personal communication, March 23, 2004).

FILMING THE VIDEO

The researcher contacted a professional filmmaker to understand how to shoot the video in order to make the video look professional. The filmmaker advised on the best use of the digital camera, the lighting, angle of the camera, filming for easiest editing later, and post-production distribution techniques (G. Folse, personal communication, March 21, 2004).

A time was arranged to record the video at a studio in the School of Social Work at the University of Texas at Austin. The type of camera used was a Panasonic Mini-DV Digital Palmcorder, Model PV-DV701, and the type of tape used was a Panasonic Mini-DV. The researcher practiced using the camera before the day of filming in order to become familiar with its features. The camera was set on a tripod for the filming.

The team was compromised of eight individuals, three Deaf and five hearing. The combined professional backgrounds of the team included four individuals with experience in chemical dependency, two licensed signing mental health practitioners, four individuals who had worked with the Deaf in mental health settings and two certified interpreters. All present could sign except for one. The non-signing member was a co-chair of the researcher's doctoral committee and an interpreter was hired to voice the conversations for her.

After the team arrived, the position of the camera, background and lighting were arranged by the researcher based on the feedback from the video consultant. The Deaf team members suggested changing the lighting to better illuminate the signer's face and hands. All of their directives were followed.

Using the final item list, the signer rehearsed each item and the team gave feedback about making sentences the clearer and deleting or adding certain signs. The team discussed using signs commonly seen throughout the United States, instead of using "Texas signs." Once the discussion was completed, the item was ready to be recorded. Some items required a few takes because of mistakes or the need to further clarify concepts. The signer also suggested adding "What are drugs?" and "What is alcohol?" to the introduction to clarify these concepts and to orient the viewer to the signs the signer

would be using. Clarifying "drugs" was also necessary for those who might confuse "drugs" with prescription drugs, and to introduce the overuse of prescription drugs as part of the screening. An introduction and closing were also filmed.

While the team was given the list of items to be filmed, the team and the signer had flexibility in the expansion and correct syntax of the ASL items. The researcher chose to not restrict the signer, because following the syntax of a written English list would have resulted in PSE or SEE items. The eight individuals functioned as a team – all feedback was respected, and ideas built upon previous ones, capitalizing upon the knowledge and creativity of all eight individuals. Using a team approach to create the video is consistent with Deaf culture's collective decision making. Although the team had flexibility translating the items, if translation resulted in an intent different than the original item, the researcher interrupted the discussion to explain the underlying concept. For example, one item written by the researcher ("Do many of your friends like to drink/drug?") was intended to get at the idea of associating with individuals because of the common interest in drinking or drugging. After discussion, the team translated the item to imply that an individual was a "wannabe" and associated with substance abusers to fit in (not an actual substance user). The researcher explained her intent when she wrote the item and redirected the team. A new, and clearer, statement was created: "Do you hang out with friends because they like to drink/drug?"

However, at times, the intent of the item was not clear to the researcher, at which point she consulted with the dissertation co-advisor. For example, MAST item #9 in English ("Have you gotten into fights when drinking?") leaves the respondent to determine if the word "fight" means a physical fight, a verbal fight, or both. The signs

for “fight” in ASL are not vague. The signer would either indicate a “physical fight” (the signer mimes throwing a punch), or a “verbal fight” (yelling). After discussion, two “fight” items were filmed separately (one for physical and one for verbal) as item #6 and item #7, respectively, on the video. For the final list of items that were filmed, see Appendix H.

EDITING THE VIDEO

Once the video had been filmed, the raw footage of the signer on the DV needed to be edited. In addition to the items, the raw footage also contained the signer signing to people off camera, discussions about items (although the video only showed the signer), mistakes and retakes, and people walking in front of the camera. The purpose of the editing was to cut the footage into 22 individual clips – (1) the 18 items, (2) the opening instructions (“Don’t put your name on the paper”), (3) the “What are drugs?” clip, and (4) the closing (“Thank you for answering these questions”).

The DV of the raw footage was transferred onto a computer with a software program for editing the DV. In addition, the raw footage was stored on two other computers and made in to a CD.

The first attempt to edit the raw footage was with a software program called Pinnacle Studio AV/DV Software, Version 9. Because the technical assistant could not sign, the researcher made all of the cuts herself. The researcher watched the raw footage, which later had a ruler at the bottom of the editing screen. The markings on the ruler served as a running counter of the video frames, which indicated where to “cut” the video. When the raw footage was cut in two places, everything captured between the two

cuts became a video "clip," which became individual video items. The researcher kept a log of all of the clips, (e.g., running time 2:01 – 2:22 for item #1). The Pinnacle Studio required the clips be pasted onto a new tool bar. Unfortunately, after pasting the clips to the tool bar, it was discovered that the software program did not allow the clips to remain separate, but instead created one long "movie." This would not serve the purposes of the video, which needed 22 individual clips. New software would have to be used.

The second program attempted was Microsoft Windows Movie Maker (Software Version 5.1). The raw footage was cut again into clips. However, the software compressed the files, which caused the picture quality to be slow and jerky, and creating "blips" on the screen where frames had been dropped by the software. The poor picture quality was unacceptable because the clarity of the translation was lost for some items. For example, in item #8 ("Have you tried to stop drinking or using drugs in the past, but have not been able?") the signer signs "STRUGGLE CAN'T STOP, QUIT?" There was a blip at the sign for "can't" ("can't" is one sign). Dropping the sign "can't" changed the item to "STRUGGLE STOP, QUIT."

For the third attempt, Adobe Premiere Software (Version 6.5) was used. The footage was captured as large AVI files, which maintained the integrity of the picture. Unfortunately, the size of the files were problematic – the AVI files alone were over 1.46 gigabytes, approximately equivalent to 1,013 floppy disks. The files had to be loaded onto the laptop (not played from the CD), because as the computer read the CD, it interfered with the smoothness of the picture. Also, the finer bits of editing, such as the fade-ins and fade-outs which would enhance the viewing of the video, still needed to be done.

Because of the numerous problems surfacing with desktop video editing, a video editor was hired. Fortunately, a Deaf video producer/editor was located near San Antonio. The video producer/editor had a background in broadcast television and motion picture film production, and was hired to edit the raw footage. He used the original log created by the researcher which indicated where to make cuts, and a printed list of items. Because the video producer/editor knows sign language, he could differentiate between full sentences and mistakes, and make the cuts at the appropriate places. Further, because the video producer/editor is himself Deaf, he understands Deaf culture and how to make the video appealing for Deaf populations.

The raw footage was edited and created into three different sized files: large, which was a full-sized DV edited file and which had the highest quality possible; medium files for CD-ROM presentations; and small files, appropriate for Web use. With each decrease in file size, there was a trade off between picture clarity and smoothness of the video – the more clear the picture, the less smooth the signing. The large file looked like it had the smoothest and most realistic signing, but the picture was not as clear as the smallest file. Although the smallest file has the poorest quality, to the human eye it looks clearer because it is smaller and therefore looks sharper (D. Pierce, personal communication, August 30, 2004). As recommended, the medium sized file was the best compromise and would be used for the creation of the video to be tested. A VHS of the same video clips was also created; the VHS was the back-up that could be shown in case of computer problems. The VHS is actually a copy of the large DV file, transferred to standard video. The VHS shows what the real quality looks like when

played at proper speed without computer playback interference (D. Pierce, personal communication, August 30, 2004).

POWERPOINT DESIGN

The video clips needed to be housed in a program which would guide the viewer through the questions and indicate when to mark answers on the sheet. PowerPoint was suggested because video clips could be inserted into the PowerPoint presentation. Further, hidden slides could be inserted into the presentation which could serve as captioning if the viewer desired (K. Barnett-Gibson, personal communication, March 25, 2004). The researcher created 94 slides, beginning with a title slide and a welcome slide, followed by the video clips which contained instructions (e.g., "Do not put your name on the paper") and the item questions. The item question slides indicated the item number ("Question #1," "Question #2," etc.), followed by a slide which housed the video clip. After the video clip slide, a slide prompted the viewer to circle their answers on a sheet of paper, (e.g., "#1, Yes or No?"). Slides were created to thank the viewer for their participation, ending with a list of credits.

Knowing that many Deaf individuals would not be familiar with computers, the screen was designed for simplicity and user-friendliness. Wording was clear and simple (more about reading level of items is explained further in the next section) with few words per screen. The screen with the video had four control buttons: a "forward" button to advance to the next screen, a "back" button to review the previous screen, a "CC" button which opens the captioning, and the "again" button which replayed the entire video.

TRANSLATING THE VIDEO

As discussed earlier in this chapter, the team that translated the items was not restricted by the researcher to follow the English sentence as exactly as possible. In some cases, the team expanded upon the original item in order to make the item clearer, using situational examples for clarity. The video clips were now in ASL and had to be translated into English sentences so that captioning could be added. Because of reading difficulties for many Deaf individuals, it was necessary to translate the ASL sentences accurately, but to be sure that the sentences did not exceed a fourth grade reading level.

The original item list was used as a guide, but the authors of these hearing scales did not write the items with an eye towards individuals who have limitations reading English text. Despite the fact that only the simplest and clearest items were selected from pre-existing scales, evaluation suggested that the average reading level for the selected AUDIT, CAGE and MAST items was still at a Flesch-Kincaid grade level of 6.73. The actual reading level for the CAGE-AID is 11.8; the MAST is at 5.7 and the AUDIT is 7.9. Because the researcher wrote her items for Deaf populations, the average reading level for her items was 4.27. Only one of her items was much higher than the 4th grade reading level goal: "Is there gossip about your drinking/drugging in the Deaf community?" which read at an 8th grade level.

Another difficulty in translating was making correct English phrases from ASL sentences. Some ASL phrases do not have an English equivalent (and vice versa), so it was necessary to select English phrases as close as possible to the ASL video phrases so that individuals who used the captioning would not be taking a different test. Rewriting CAGE-AID, AUDIT and MAST items while retaining the same meaning was difficult,

requiring the researcher to team up with another professional has experience with Deaf individuals with limited reading skills. See Appendix I for the Reading Ease Chart which lists the item's reading level before translation and the item's reading level after translation.

The first choice the researcher had was where to place the captioning – on the same screen as the signer or on a separate screen that could be opened if the viewer wanted clarification. After creating a duplicate of the PowerPoint program, both versions were tried. Having the captions at the bottom of the screen with the signer did not work for three reasons. First, the sentences were visually distracting and created "visual clutter." It was not clear if the viewer was supposed to be reading or watching. It was hard to do both, given the speed of the signer. Second, the English sentences would not match the signer because the translation team used expansion. So the signer may be signing an item for twenty seconds, but only one sentence would be shown for that time. Third, adding the sentences to the screen required that the screen be smaller, at least on the PowerPoint version of the screening. It seemed clear that because the screening was meant to be in ASL (and ASL is an unwritten language) and given the numerous problems with having the captioning on the bottoming of the signing screen, it would be better to place the captioning on a separate screen that could be opened if the viewer wished. For the initial item grade level and the translated item and new grade level, see Appendix F.

At this point, a title for the scale needed to be chosen. The title of the scale had to be easy to remember, explain the purpose of the scale, not be already used by other drug assessments, not be like other abbreviations (such as ADA, for Americans with

Disabilities Act), and be easy to fingerspell. The title "The Deaf Assessment for Alcohol and Drugs (DAAD)" fit the criteria (B. Johnson, personal communication, April 2, 2004; D. Dittfurth, personal communication, April 4, 2004; D. DiNitto, personal communication, April 4, 2004).

After the PowerPoint presentation was created, two problems became evident. Foremost, the PowerPoint program had the potential to allow the participants to view the video as many times as desired, but this functionality was difficult to obtain. Because the video clips are inserted into PowerPoint, the creator chooses how many video clips will be attached. For example, for item #1, the creator could choose to have five video clips attached, in case the participant wanted to view the video four extra times. Then, for item #2, five video clips would also be needed, and so on throughout the PowerPoint presentation. Thus, as the number video clips grows, the size of the PowerPoint presentation also grows. The participant would at some arbitrarily set point be limited as to how many times he or she could view the video clips. The researcher felt it was essential to allow the individual to view the video clips as many times as he or she wanted, as a participant might miss or not understand a sign, may look away at the wrong time, or simply wish to see the question several times before answering.

In addition, a PowerPoint file with embedded video clips is large and could prove difficult in transferring between computers (i.e., being put on a floppy disk or CD). Using PowerPoint would also mean that the video would have to be shown on a Windows-based computer. Finally, the computer being used to view the video would have to have a PowerPoint viewer installed, or the video clips would be difficult to view.

WEB PAGE DESIGN

The researcher contacted a multimedia consultant for suggestions on working within the limitations of PowerPoint (L. Born, personal communication, April 12, 2004). The technology consultant suggested housing the video in an HTML format. HTML stands for "Hypertext Markup Language" and is the code used for web page design. An example of HTML is: <img src="smiley.gif"> A Smiley Face! This code tells a browser, such as Internet Explorer or Netscape Navigator, "Put an image, named smiley.gif, on the page, then put the words 'A Smiley Face!' after it." A programmer could write code that tells the browser, "Take these words, put them 100 pixels from the top of the page, and 50 pixels from the left. Put a button here and here. Here's what the buttons do..."

Slides could be created similar to PowerPoint slides, but because it was in HTML format, the participant could view the video clips as many times as needed. Captioning could be added. An HTML presentation means that any computer with a Web browser can view the videos, which would be any computer less than ten years old whether Windows-based or not. The most persuasive reason to use HTML was that the video could be available online once the scale was validated, allowing Deaf individuals to screen themselves. The only downside was the cost of the Web page design.

The multimedia consultant is employed as a computer programmer and Web page designer. The researcher hired him to create HTML slides based upon the PowerPoint slides created by the researcher. The consultant hand-wrote the code for the HTML, which allows for absolute precision over the design as (opposed to an HTML editor, who can only "get at the jist" of the intended design). He created a slide-editor, so that once

the text was in the right position on the screen, the researcher could edit the text herself. He used one of the existing video clips to determine the position of the video on the screen. However, the video clips are not stored in HTML like they are in PowerPoint, as HTML only contains a reference to the video clip. Essentially, HTML tells the browser the name of the file (in this case, the video clip) that belongs in a certain sequence among the files, and the browser gets that file and puts it in the right place.

Thus, if the video clips were already loaded onto a computer, the programmer would send the HTML files that told the browser where to place the video clips. The HTML files were quite small, approximately 2k or 3k, but combined with the video clips, when completed, the folder was 35.5 megabytes, equivalent to 25 floppies or 5% of a CD.

Once the HTML files were complete, the researcher downloaded the 71 slides individually from the consultant's website to her home computer. The slides were saved in the same folder with the video clips, so that the browser "knew" where to search for the video clips. After the HTML slides were loaded onto her desktop computer, the researcher created a floppy disk of the HTML slides and repeated the process with her computer at work where a folder of the video clips already existed. At the researcher's place of employment, she was given a WebCT classroom site to store her dissertation video. WebCT is a course management system that allows the instructor to place classroom materials in password protected space on the university's server. This would serve as a backup in case of computer failure as with internet access and a password, the researcher could then administer the screening exactly as it was viewed on the laptop.

The connection from the WebCT site to the laptop proved to be the fastest because of the direct link between computers through high-speed internet (i.e., no transferring the video files between computers via CD). From Web CT, all the slides and video clips could be loaded onto any laptop computer. The researcher provided her committee, the team members involved with the ASL translation, and the technology team with the site and password to view the completed video scale. Some individuals who attempted to view the screening from educational or military servers had difficulty viewing the scale. It was theorized that the issue was related to server firewalls.

THE ASL-SCID

The Structured Clinical Interview for the DSM-IV (SCID) has been or is in the process of being translated into thirteen languages, including Spanish, French, German, Russian, and Greek. Given the difficulties in creating scales for Deaf populations, it is not surprising that there is no ASL SCID. Like most standardized screenings created for hearing populations, the SCID poses numerous problems for the non-homogenous Deaf population.

The SCID is divided into modules based on the various DSM-IV categories. The SCID is available as a paper copy, and non-for-profit institutions (including universities) may make photocopies of the needed modules free of charge. The SCID may also be purchased on disk from the Biometrics Research Department at New York State Psychiatric Institute. Purchasing the SCID on disk allows researchers to customize the SCID to the needs of their projects by eliminating questions about diagnoses not of interest to them. In addition, the SCID has training videos which walk the viewer step-

by-step through administration of the SCID, criterion clarification, and item interpretation.

The researcher checked-out the printed SCID and the training videos for Modules A and E from the university library at her place of employment. She photocopied Modules A and E and watched each of the training videos twice while making beginning notes on translation of SCID items into gloss. As previously discussed, the SCID interview would need to be customized to each Deaf individual's sign language preference and background. However, creating a basic gloss of the SCID would provide a guide for the researcher, so that she would not have to translate SCID items from written English into sign while matching the individual's sign preference and educational background.

The SCID on disk was purchased. The researcher retained all of the questions relating to major depression and eliminated questions screening for related disorders such as postpartum onset, bipolar disorder, and mood disorders due to a general medical condition. Doing so created an English SCID customized for the project.

Without an ASL SCID, the researcher decided to create a gloss SCID beneath the English SCID questions to avoid translating the items in her head while trying to simultaneously collect research data from a participant. Also, a gloss would keep the signs as consistent as possible throughout the study. However, as would be expected in a non-homogenized population, an individual's background required that signs be modified to match their understanding of the questions, such as with individuals who were highly educated.

Underneath the English item, a sign gloss was typed in blue italics. The researcher used < > to remind her of the handshapes to be used, as some English words can be translated more than one way. For example, "Problems making decisions <decide AND alternating A hands>" reminds the researcher to use both the sign for "decision" and the sign for "tentative" that is used by alternating the "A hands."

The result looked like:

> [SCID item:] Was it hard to make decisions about everyday things? (Nearly every day?)
>
> [Gloss translation] Problem decisions <decide AND alternating A hands> normal things? Almost everyday?

In order to gather demographics, researcher also created an interview face sheet for basic information such as age, ethnicity, and sign language preference. These questions served three functions. First, the questions provided needed demographic information. Second, through these questions, the researcher was able to get a feel for the participant's communication style and level of functioning. Third, it was recommended that "easier" items be used first to establish rapport with the participant before beginning the more personal questions about depression and substance abuse (I. Tidblom, personal communication, June 10, 2004). Appendix K lists the initial and revised face sheets used to collect demographic data, and Appendix L lists the template gloss SCID.

A significant problem with using the SCID for Deaf populations is that Module E screens for life substance history abuse/dependence by handing the subject a written list of drugs and asking them to read off the substances the participant has used. The purpose of creating an ASL video was to avoid the difficulties Deaf individuals may have with

reading. The SCID training video instructs researchers to read the list to participants who can not read well. However, reviewing the list in sign to approximately 50 participants is unusually taxing and introduces more variety into the study.

Local experts in substance abuse were contacted to find a pictorial list of drugs that could accompany the written list. No such pictorial list could be found (D. Dittfurth, personal communication, June 6, 2004; D. DiNitto, personal communication, May 28, 2004; L. Holleran, personal communication, June 1, 2004). National experts were contacted and likewise did not have a pictorial list (B. Blood, personal communication, June 8, 2004; D. Moore, personal communication, June 1, 2004; K. Poore, personal communication, June 11, 2004). One of the authors of the SCID was contacted to see if he knew of others who had used the SCID with Deaf individuals; contact with other researchers was intended to get advice on overcoming such limitations. He reported that he was not aware of other researchers using the SCID with Deaf populations (M. First, personal communication, June 24, 2004).

The Deafness and substance abuse experts also pointed out that drugs take many formulations in different parts of the United States. For example, in Baltimore, heroin is sold in wax paper bags with prints on them, but in California, heroin is usually sold in plastic bags (B. Blood, personal communication, June 8, 2000). It would be important to choose the pictures carefully, as some individuals might see a picture of a marijuana plant, but have only seen marijuana as a "joint," which could trigger them to say "No" when the correct answer is "Yes" (I. Tidblom, personal communication, June 8, 2004). Therefore, pictorial list should include various formulations when possible. Also, the list should include words because well-educated Deaf individuals might feel insulted to

receive only a pictorial list (I. Tidblom, personal communication, June 8, 2004). The consensus from all Deafness professionals was to integrate the written and pictorial lists, use more than one picture when possible, learn regional drug signs at each data collection site, and use expansion for clarity.

One expert suggested contacting Publishers Groups, LLC, through their website, www.streetdrugs.org for their drug identification handbook which is used for educational purposes (B. Blood, personal communication, June 8, 2004). Their handbook was purchased, and the researcher found, as recommended, it to be an excellent resource of drug pictures. She contacted Publishers Group, LLC, and, explaining the rationale for her request, asked if she could use some of their pictures of create a pictorial screening list for the purposes of her research. They denied her request because of copyright restrictions (Publishers Group, LLC, personal communication, June 11, 2004). While the handbook was excellent, it would not be feasible to flip through the handbook to show the various pictures. The pages the handbook were marked with tabs for easy reference to certain drugs so that the handbook could be used as a back-up for individuals needing more clarification.

Using the original SCID drug list, the researcher created a table with two columns. On one side, each row had the drug category from the SCID written list. Across from it, the second column contained various pictures of drugs in a variety of forms. These pictures were downloaded from various internet websites and were chosen for how well they represented commonly used drugs. All pictures were in color and, after being downloaded, the researcher was trained to use Microsoft Photoshop Editor (3.0.2.3 Edition) to resize the photos so that all pictures were approximately the same

proportion (K. Barnett-Gibson, personal communication, June 10, 2004). The list was sent to her dissertation committee and their feedback was incorporated into improving the visual version of the list (D. DiNitto, personal communication, June 10, 2004; L. Holleran, personal communication, June 11, 2004).

After reviewing and practicing the gloss items, the researcher practiced giving the SCID in spoken English, her native language, to be sure she understood how to use the tool. The "participant" was the individual who would be collecting data with the researcher. The "participant" was instructed to answer "yes" to all items to ensure that all items would be asked (if items are answered "no," a whole section might get skipped). All feedback about the flow and need for clarity of the items was noted (B. Johnson, personal communication, June 1, 2004). Second, she practiced giving the SCID to a Deaf mental health professional, this time noting suggestions for rewording and clarifying her signs (I. Tidblom, personal communication, June 8, 2004). Finally, the researcher videotaped herself giving the SCID and watched the videotape for areas that needed improvement. Videotaping is commonly used to teach and refine interviewing skills.

CONCLUSION

Tools exist to conduct mental health and substance abuse research with hearing populations, but when conducting research with Deaf populations, the building blocks must be modified or created. Once modified or created, the researcher is unsure how well the new components will fit together to achieve the desired result. The validation of

the DAAD scale, discussed in the next chapter, addresses how successful the researcher was in achieving this goal.

Chapter Four: Methodology

INTRODUCTION

Social science researchers often encounter the problem of trying to quantify attributes for which no scale exists. The result is that the researcher must create a new scale which will accurately measure the intended constructs in the population of interest (DeVellis, 2003). Creating scales that are appropriate, accessible and useful for clients is a natural extension of social work roles (Springer, Abell & Hudson, 2002a). This is especially true with substance abuse and dependence scales, which are often validated on convenience samples, but lack validity for minority populations.

Without a clear understanding of the theory that underlies substance abuse research and scale construction, one may assume that the scales are merely "assembled" and not "developed" (DeVellis, 2003). Therefore, the following is a review of classical test theory and prescribed steps for scale creation.

CONCEPTUAL FRAMEWORK

The steps that guide test construction are derived from classical test theory (CTT), so it is necessary to understand its theoretical underpinnings. In general, the process of scale development begins with identifying or delineating the construct to be measured, followed by generating a pool of items to measure the construct, having experts review the item pool, conducting a pilot test on the scale to identify problematic items, make any needed corrections on the final version of the scale, administering the scale to a larger sample, conducting an item analysis, and validating and norming the test. DeVellis (2003), Spector (1992), and Springer et al. (2002a) suggest specific steps, which vary

from each other depending on the emphasis of their methods (Springer, 1997). Because Springer et al. (2002a), and Springer, Abell & Nugent, (2002b) offer steps for scale development specifically for populations served by social workers (i.e., minority, underserved, impoverished) their methods will be followed in this dissertation.

CLASSICAL TEST THEORY. Also referred to as the classical measurement model (Crocker & Algina, 1987), CTT is based upon general principles that do not rely on a specific discipline. The result is that test theory can be used to measure a variety of attributes, and is "…uniquely derived to meet the specific measurement needs of researchers in education and the social sciences" (Crocker & Algina, 1986, p. 8). Currently, most scales are created using CTT.

Attributes that scale developers in social sciences wish to measure, such as "depression," "intelligence," and "prejudice" are not directly observable and therefore difficult to quantify. These attributes are latent variables because the attribute is not manifested directly and because the amount of the variable differs. By definition, a variable varies, which is why we want to measure it. Each individual has a certain amount of the latent variable, which can be at least roughly measured in the item score (DeVellis, 2003; Spector, 1992). In test theory, a theoretically infinite pool of items exists from which the researcher can draw when trying to develop a scale This is known as the domain sampling model (Nunnally & Bernstein, 1994). In the domain sampling model, the scale developer attempts to choose a sample of items that is representative of this larger pool. Therefore, it is beneficial for the scale developer to initially write many items that capture the construct, increasing the likelihood of capturing items that are representative of the theoretical pool. The scale developer can then choose items from

this large item pool, which is "…conceptually analogous to random sampling, in that items…are drawn in a theoretically unbiased manner from a domain that completely expresses the target construct(s)" (Springer et al., 2002a, p. 415).

Though it is impossible to create an infinitely large sample of items from which the scale developer can draw (Springer et al., 2002a), the domain sampling model can be used as a guiding framework. The model requires the researcher to write a large number of items that are representative of only the construct one intends to measure. Because the pool is theoretical, the researcher must argue that he or she has accurately captured or measured the theoretical construct as intended in the final version of the scale. Doing so establishes construct validity, the type of validity most closely linked to theory (Personal communication, D. Springer, September 30, 2003).

Test theory attempts to measure the individual's true score, which is the theoretical amount of the attribute that the individual possesses. In order to obtain true scores, the attribute can only be measured indirectly. All scales contain error because it is impossible to create a scale that perfectly measures the attribute, due to external circumstances such as scaling error or factors in the testing environment (DeVellis, 2003; Spector, 1992; Springer et al., 2002a). Spector (1992) notes, "If one had a perfectly reliable and valid measurement, the observed score would equal the true score" (p. 10). Therefore, true score is a combination of the individual's observed score and the error inherent in the scale. The result is CTT's fundamental equation:

$$X = T + E$$

Where X equals observed score, T equals true score and E equals error.

Using the formula, it is clear that if one could determine the amount of error, one could also determine the actual or true score. Yet true score and error are both theoretical abstractions, so one can never know the actual amounts. However, by estimating error variance, researchers can plug it into the formula and get a glimpse of the true score (Springer et al., 2002a).

CTT has two drawbacks. First, it relies on several assumptions that are frequently violated in real-world practice. Second, CTT scales developed have one gross amount of error which is derived from the sample and it is assumed that the error will be the same for other samples. Therefore, CTT is sample dependent.

RELIABILITY

In order for a scale to be useful, it must be reliable. Reliability simply means a measure produces the same results. Kerlinger's (1986) analogy is of two shotguns used by an expert marksman. The first gun consistently hits outside of the range of the target and the second gun hits around a clustered area near the bulls-eye. The second instrument is said to be more reliable (Kerlinger, 1986).

RELIABILITY THEORY. In classical test theory, the theoretical score is the combination of true score and error score (X=T+E). However, the result is no direct way to view observed score (Springer et al., 2002a). If error is defined as the difference between what is observed and the individual's true score and all measures contain error, "[r]eliability is defined, so to speak, through error" (Kerlinger, 1986, p. 408).

There are two types of error: systematic and random. Systematic error is a bias in the instrument that consistently produces incorrect answers (Rubin & Babbie, 1997).

Systematic error is not a problem for reliability because the results are still produced in a consistent fashion. However, random error impacts reliability, as random errors are "hit-and-miss" and have no discernable pattern. As random error increases, reliability decreases (Kerlinger, 1986; Rubin & Babbie, 1997).

ESTABLISHING RELIABILITY. To create reliable measures, four primary methods are generally used. First is interrater reliability, in which raters are trained to score items similarly. Rubin and Babbie (1997) suggests at least a .80 correlation between the raters' scores in order for the raters to be considered reliable.

The second method to establish reliability is the consistency over time (test-retest) method (Springer et al., 2002). The same test is administered to the same individual at different points in time. Rubin and Babbie (1997) suggests scores should correlate between .70-.80. Maturation is a major limitation of this method (Rubin & Babbie, 1997) and not recommended unless the scale developer it attempting to measure a trait that is stable over a period of time, such as the acquisition of independent living skills (Springer et al., 2002a).

The third method for establishing reliability is parallel forms reliability. With this method, the researcher creates a scale equal to the first and the scales are assessed for correlation. This method is rarely used because of the difficulty in creating one scale, let alone two (Rubin & Babbie, 1997).

Finally, the method most widely used to establish reliability is internal consistency. With this method, the scale developer is trying to assess the homogeneity of the scale by assessing how it co-varies with itself. To the degree that the correlation is strong, the scale is considered reliable (Rubin & Babbie, 1997; Springer et al., 2002).

This can be accomplished in two ways. The first way is to simply divide the instrument in half and give half of the instrument to one group and the other half to different participants (Rubin & Babbie, 1997; Springer et al., 2002). This is known as split-half reliability. However, it is difficult to know how to divide the scale – should the researcher choose odd/even questions or the first half verses the second half? The way the scale is divided can influence the psychometric properties because it could be argued that the recipients got "a bad split." The possible combinations of items can be enormous depending on the number of scale items depending on the number of scale items. The ideal is to compute all of the possible splits and get an average.

There is, in fact, a method of calculating internal consistency reliability that allows the scale developer to do exactly that. It is called internal consistency and is often computed using Cronbach's alpha (Rubin & Babbie, 1997; Springer et al., 2002). Coefficient alpha is also the recommended method because it "…provides a direct estimate of the alternate form reliability that would be obtained if an equally good parallel form of a particular scale were available" (Springer et al., 2002a, p. 425). Springer et al. (2002b) offer guidelines for acceptable reliability coefficients: below .70 is unacceptable, .70-.79 is undesirable, .80-.84 is minimally acceptable, .85-.89 is respectable, .90-.95 is very good and over .95 is excellent. For scale items with dichotomous response options, such as yes/no, a special form of coefficient alpha is used – Kuder-Richardson formula 20 (DeVellis, 2003). It is important to note that shorter scales negatively influence alpha (Spector, 1992). The scale developer should make the trade-off between brevity and reliability only when there is "reliability to spare" (DeVellis, 2003).

STANDARD ERROR OF MEASUREMENT

In CTT, error can only be known indirectly, but it is necessary to estimate it. Because error is a variable, the researcher can find its mean and standard deviation. The Standard Error of Measurement (SEM) is the standard deviation of the error, averaged for the group. Therefore, SEM is an estimate of how far true scores may be from the observed score (Kerlinger, 1986; Springer et al., 2002a).

Because SEM is the standard deviation of variance scores in homogenous populations that have little variance, the researcher will find less variance which will affect the reliability coefficient. Therefore, it is necessary for the researcher to be aware of this shortcoming, or to gather as diverse a sample as possible. Kerlinger (1986) suggests the "max min, con" principle: "Maximize the variance of the individual differences, and minimize the error variance" (p. 415). To minimize error variance, various authors suggest writing items as clearly as possible to avoid misinterpretation and giving a standard set of instructions (Rubin & Babbie, 1997).

It is important to note that SEM is only an estimate of how far the individual's true score may be from the observed score. Confidence intervals can be computed to indicate the likelihood that the true scores actually do fall within this range, but there is no guarantee that they do so. The scale developer wishes to have a low SEM, because it indicates good measurement error characteristics (Springer et al., 2002a).

Reliability is a necessary part of validity, although a scale can be reliable without being valid. Even though a scale is reliable, it is not assured that the scale is measuring what it intends to measure. A scale should be both reliable and valid.

VALIDITY

Put succinctly, validity addresses the question, "Are we measuring what we think we are measuring?" (Kerlinger, 1986, p. 417). Because the attributes the scale developer is attempting to measure must be measured indirectly, there is no way to "prove" validity, and evidence must be gathered to support that the new scale is valid (Springer et al., 2002a). Validity must be examined from both theoretical and practical standpoints.

FACE AND CONTENT VALIDITY. Face validity refers to how an instrument looks "on its face," and scales "pass through" this first type of validity (Springer et al., 2002a). There is some debate about how to treat face validity. Rubin and Babbie (1997) treat face validity as its own category, while Springer et al. (2002a&b) follow Crocker and Algina's (1986) model of combining face and content validity. Kerlinger (1986) does not even address face validity.

Whether or not an instrument has face validity, it is necessary that an instrument measure the concept of interest; for example, an anxiety scale should measure anxiety and not another construct like anger or depression. Content validity refers to the overall "fit" of the item to the domain(s) of the scale that define the construct. To ensure that an instrument has good content validity, the scale developer wants to make sure that the scale reflects a range of questions that are representative of the construct (Kerlinger, 1986; Rubin & Babbie, 1997).

The scale developer must be mindful of face and content validity for the duration of the development of the scale, continually assessing the overall fit between the items being developed and the construct being measured (DeVellis, 2003; Springer et al., 2002a). In order to assess this type of validity, after the scale developer carefully

assesses each item for fit, he or she may ask experts in the field to act as judges, by ranking how well the items fit the domains (DeVellis, 1991; Springer et al., 2002a). Springer et al. (2002a) suggest modifying Hambleton's (1980) system of asking the experts to rank the items as a +1, 0 ,or -1, which indicates that the construct captures the domain (+1), is neutral (0), or does not capture the domain (-1). When the scale developer has created a large pool of items via the domain sampling model, expert feedback should be viewed tentatively at this stage (Springer et al., 2002a).

CONSTRUCT VALIDITY. Kerlinger (1986) believes that construct validity is the most important type of validity because "…it links psychometric notions and practices to theoretical notions" (p.420). Construct validity looks at why the instrument measures what it does, as it examines what factors account for variance in test performance measures (DeVellis, 2003; Rubin & Babbie, 1997).

Construct validity includes both convergent and discriminant validity. Convergent validity refers to how well a measure corresponds with other constructs or variables that attempt to measure the same underlying idea or concept (Rubin & Babbie, 1997; Springer et al., 2002a). Convergent validity is evidenced by computing correlations (e.g. Pearson's r) among variables, such as two scales, that have a hypothesized relationship to the construct in order to assess the similarity in functioning between the two scales. Factors that strongly correlate with the established variables indicate good convergent validity. If no variables point to the constructs which would indicate good convergent validity, the scale developer would use a review of the literature, common sense and practice experience to establish these markers (Springer et al., 2002a).

Discriminant validity is the degree to which an instrument discriminates between like and different concepts. Discriminant validity attempts to distinguish between the concept the scale developer is trying to measure and similar but related concepts, such as grief and depression (Rubin & Babie, 1997). It is assessed the same way as convergent validity, only the scale developer hopes for non-significant and lower correlations (Springer et al., 2002a).

CRITERION-RELATED VALIDITY. Criterion-related validity is an empirical measure comparing the scale to an external criterion (Rubin & Babie, 1997). While some authors argue that the distinction between construct validity and criterion related validity are necessary (DeVellis, 2003), others argue that it is merely artificial (Crocker & Algina, 1986).

Criterion-related validity is divided into two types: concurrent and predictive. Concurrent validity examines the correspondence to a criterion known concurrently. Therefore, participants who score highly on a new scale to measure depression should also score highly on existing measures of depression.

Concurrent validity also has two sub-types. The first, known-instruments validity, uses a well-established measure, usually considered the "gold-standard," to compare the new scale. However, if no outside standard exists, it is impossible to establish known-instruments validity. The second type of criterion validity is known-groups validity, in which the researcher determines the extent to which the new scale distinguishes between two groups, those who have the underlying characteristic, and those who do not (Springer et al., 2002a). Known groups validity can greatly enhance a scale's clinical utility.

The second subtype of criterion related validity is predictive validity, which is the scale's ability to predict future behaviors. In order to establish this type of validity, participants must be followed over a period of time (Springer et al., 2002a).

The last type of validity, factorial validity, is established via factor analysis (Spector, 1992). Factor analysis is an empirical way of looking for patterns and similarities among the latent items by categorizing the items that are similar into groups, known as factors (DeVellis, 2003). The researcher decides how many factors to select based upon practice wisdom and familiarity with the literature. Factor analysis groups the items based upon co-variance between items -- those that co-vary will load on the same factors. A scale that co-varies highly with itself will create a single-factor. Intended items should load together and dissimilar items should not (Spector, 1992, Springer et al., 2002a).

Factor analysis requires large samples (DeVellis, 2003). Hair (1998) suggests using samples of 100 participants or larger and definitely no fewer than 50, with a ratio of 5 observations to 1 variable (10:1 is even more desirable). The large sample is necessary to avoid "over fitting" the data (e.g. getting statistically significant results because of the small sample size) (Springer et al., 2002a).

There are two types of factor analysis: confirmatory factor analysis and exploratory factor analysis. Exploratory factor analysis (EFA) is used when the number of latent variables is unknown and there is a poor literature basis for creating the scale. Confirmatory factor analysis (CFA) "allows the testing of a hypothesized structure" (Spector, 1992, p. 53).

Despite the guidelines established, factor loading determination is surprisingly subjective. With EFA, scree tests and eigenvalues are two non-statistical guidelines for determining the number of factors, but statisticians disagree on their reliability and usage. Even though the factors load as expected, it does not necessarily point to the latent constructs one is attempting to measure (DeVellis, 2003; Springer, 1997).

THE RESPONSE CONTINUUM. Spector (1992) notes that the most common response choices are agreement, evaluation and frequency. Agreement asks respondents to state how much they agree with a statement. Evaluation asks respondents to rank opinions or behaviors on a good-bad continuum. Frequency asks respondents to note how often an event occurs.

Ways to score the responses fall into two categories: weighted and unweighted. Weighted responses, such as Guttman scales, are rarely used in social science scales. Unweighted responses, such as Likert scaling and dichotomous scaling, create a response set where each response contributing equally to the score.

Likert scaling is common in scales used in social work practice. The response is a range of answers, such as "strongly disagree, disagree, neutral, agree and strongly agree." The responses may be either even or odd in number, depending if the scale developer wishes to create a "forced choice" response set. By choosing an even number, respondents are forced to indicate their inclinations. However, others assert that doing so creates error, as some people truly do feel neutral (DeVellis, 2003; Springer et al., 2002a).

Dichotomous response scales can be problematic because the responses do not allow for enough variability (DeVellis, 2003; Spector, 1992). Spector (1992) gives an

example of a dichotomous response: "Do you like the government? (Yes or no)" (p. 4). Those who answered "yes" will vary in the degree to which they like the government, but it is impossible to distinguish the group any further. Also, those who are neutral about the government have been forced to choose a response that may not accurately represent how the truly feel. For issues that are broad in scope, more complex response choices are required.

However, dichotomous responses also have a distinct advantage in that respondents can quickly decide if the items describe them. Therefore, the participants are more likely to complete the scale. The scale developer can offset the lacking variability by simply writing more items, which will enhance reliability (DeVellis, 2003). Most substance abuse screenings (CAGE, MAST, TWEAK, SASSI) responses are dichotomously formatted.

DIMENSIONALITY. When creating a new scale, the scale developer should consider if he or she is attempting to measure only one construct or several constructs that are related to each other. The result determines the dimensionality of the scale. Unidimensional scales, such as the DAST, have only one construct. The items on a unidimensional scale should correlate with each other (DeVellis, 2003).

Multidimensional scales are simply conglomerations of unidimensional scales, separate components related to a main theme. Multidimensional scales are longer and more complex than unidimensional scales, so thought should be given to the target audience's ability to understand and complete a more complex scale (Springer et al., 2002a). The items on multidimensional sub-scales should correlate with each other (DeVellis, 2003), but ideally should load on only one factor (Spector, 1992). Longer

scales can also positively influence alpha and are considered to be more reliable than a shorter scale. Therefore, it is imperative that the new scale has "reliability to spare" so that unfavorable items can be eliminated (DeVellis, 2003). Most substance abuse screening are unidimensional and thus short, the notable exception being the AUDIT.

ITEM RESPONSE THEORY.

A recent trend in scale development has been to develop tests using Item Response Theory (IRT) (DeVellis, 2003). The advantage of IRT is that error can be differentiated. In CTT, observed score is derived for the test in its entirety. By contrast, IRT scale items can be analyzed separately to assess how each item is behaving, via use of item characteristic curves (ICC). However, IRT trades its accuracy for complexity, as there are few computer programs that can compute ICCs (DeVellis, 2003). IRT is usually out of the realm of new scale development for smaller populations, as it requires samples of 200 to 500 participants (see Crocker & Algina, 1986, for their discussion of IRT and sample size). Therefore, this dissertation uses CTT methods.

PILOT STUDY

A small pilot study was planned to test the instrument. Once the initial instrument was completed, videotaped, edited, and converted into HTML format, it was ready to be pilot tested. The HTML and the video were loaded onto a laptop computer for portability. The purpose of the pilot test was to estimate completion time, gather feedback from participants about procedures, and verify that items were functioning as expected. Because of potential difficulty locating participants for the project, it was decided that the number of participants for the pilot study should be kept small (N=20),

in order to have a larger pool for the final validation sample. Purposive sampling was utilized. Individuals were sampled from three sites in San Antonio. The first site was an independent learning center that has services for Deaf individuals; the second was a local university that mainstreams Deaf students in classes; and the third was a residential living program for a total N of 25. All data were collected by the same two individuals, the researcher and an assistant who signed.

The researcher chose to use an assistant for three reasons. First, to allow the researcher a break from the physical demands of sign language. Signing continuously is fatiguing, as ten SCID interviews equals at least five hours of signing. Sign language interpreting jobs over one hour require two interpreters so that the interpreters can switch off. Second, having another individual who is intimately familiar with the project is valuable for providing input for decisions that must be made on the spot. Finally, another Deafness expert can make independent observations that can be compared with the researcher's notes. For example, the assistant could independently note if an individual did not seem to be able to follow the purpose of the screening. The assistant chosen for this project has a BA in psychology, over 30 years of professional experience with Deaf individuals, and is familiar with Deaf culture and various sign modalities. He completed the National Institute of Health's "Human Participants Protection Education for Research Teams" training prior to the start of the research and agreed to keep participants' identities confidential.

PILOT TESTING PROCEDURE

The pilot test was conducted in the following manner: the researcher greeted the participant and briefly established rapport by chatting with him or her in sign language. The researcher and participant first met in an interview room. During the initial interview, the researcher reviewed the purpose of the research, informed participants that their involvement was voluntary, that all information was confidential and encouraged the participant to give honest answers. Participants were told they did not have to reveal their names, although some participants arranged to meet the researcher via email, so their names were known.

The interview had two parts – first the participant was asked about his/her experiences with alcohol and drugs (the SCID interview). During the second part of the interview, the participant moved to another room, watched the video containing the researcher's screening instrument and circled answers on a sheet of paper. Each part was estimated to take about 15' each, 30' estimated total, depending on how long participants' answers were. When both sections were completed, the participant was given $20 cash as a token of appreciation for their participation. No participant declined to be interviewed. At one site, due to space limitations, the interviewer and assistant used the same room, but never with two participants at once.

Throughout the pilot study, a surprisingly large number of Deaf participants were frank about disclosing substance use. Substance use and dependence is reportedly strongly stigmatized among the Deaf community, which is consistently supported by the literature (Boros, 1981; Guthmann & Blozis, 2001; McCrone, 1982; Sylvester, 1986; Whitehouse et al., 1991). The researcher wondered if the participants were fabricating

substance abuse experiences in order to receive the $20. In order to minimize possible reactivity, the researcher emphasized to each participant that no matter the answer, if the participant completed the interview and answered the questions on the video, he or she would receive $20 cash. ('IF ANSWER 'YES' OR 'NO'– INTERVIEW FINSH, WATCH VIDEO FINISH, STILL $20.') This explanation did not appear to change participants willingness to report experiences with substances.

Following administration of the SCID, the researcher brought the participants in the next room and introduced him or her to the research assistant, fingerspelling his name and giving his name sign. The research assistant explained that the participant was going to see questions in ASL about using alcohol and drugs. The research assistant told all participants about the captioning if they wished to see the item in written form. Finally, he explained that items could be viewed as many times as he or she wished. At the first data collection site, he noticed that some participants would begin to circle answers before the video clip was over; he later modified instructions to "wait until you see 'Question #1: Yes or no?' Then circle answer."

It is estimated that only one of the 25 pilot study participants understood how to maneuver the computer screens. Therefore, the research assistant moved the screen forward or replayed items as the participant requested. The research assistant placed the score sheet on the left side of the computer, the laptop in the middle and he sat on the right side in order to work the mouse. This was seen as the best compromise of assisting with the computer while trying to afford some privacy so as to not influence participant answers. At the completion of the video, he asked for any feedback, gave participants $20 cash, and asked the participant to initial a receipt indicating that he/she received the

money. While the participant watched the video, the researcher reviewed the SCID form for anything missed and noted the participant's diagnostic category. The researcher made field notes at all of the sites about the research that day, issues that arose, how they were resolved, and questions for her committee. Once her notes were completed, she began the next interview.

Table 1. Demographics of Pilot Sample

	N	**25**
Gender	N	%
Female	9	32
Male	16	64
Total	25	100
Age	N	%
18-30	12	48
31-40	5	20
41-50	7	28
51-60	1	4
Ethnicity	N	%
Caucasian	8	32
African-American	6	24.5
Hispanic	9	24.5
"Mixed"	2	.8

Language Preference	N	%
ASL	16	64
PSE	2	8
Speech and Sign	6	24
Other	1	1
Age Deafened	**N**	**%**
Birth	11	44
Under 2 years old	3	12
2-6 years old	5	20
6 or older	6	24
Level of Education	**N**	**%**
Less than high school	2	8
Graduated high school	16	64
Some College	4	16
College Degree	1	4
Grad School	2	8

Type of Education	N	%
Residential	5	20
Mainstream	19	76
Other	1	4
Primary Signer in Family	N	%
No one	11	44
Mother	10	40
Sibling	2	8
Father	2	8
Member of Deaf Community	N	%
Yes	9	36
No	16	64
Substance Use Diagnosis	N	%
Yes	12	48
No	13	52

A large portion of the 25 pilot study participants 16 (or 64%) reported that they were not members of the Deaf community. There may be three explanations for why a large portion of the sample did not identify themselves as such. First, note that six participants (24%) stated that "speech and sign" was their primary mode of communication. Individuals who prefer speech and sign often do not associate with the Deaf community. Second, the pilot data were gathered in San Antonio, which does not

have a strong, identified Deaf community like Austin or Dallas. Third, only 20% of the participants went to a residential school for the Deaf, where an identity with the Deaf community often begins.

The number of individuals who reported that their primary language is ASL was also 64%. ASL is a language that is culturally bound, so it seems contradictory that so many participants who do not associate with the Deaf community reported to be using ASL as their language of choice. Determining a Deaf individual's "true" language is complicated for several reasons. Deaf individuals may report that they use ASL, when, in fact, they use Pigeon Signed English (PSE) (M. Torres, personal communication, June 28, 2003). Deaf individuals also often adjust their sign modality to be sure the receiver can understand. Thus, Deaf individuals who prefer ASL may automatically match the researcher's PSE. Finally, it is also likely that many Deaf individuals have been influenced by the "Deaf Pride" movement and know it is socially desirable to answer "ASL," no matter their actual language preference.

The table "Substance Use Diagnosis" contains participants' lifetime history diagnoses according to the SCID. Because the SCID follows the DSM-IV format, participants who were diagnosed with Alcohol Dependence according to the SCID did not also receive an Alcohol Abuse diagnosis. Per the SCID instructions, if a participant appeared initially to meet the criteria for Alcohol Dependence, the interviewer should skip to that section, to save time. If the participant did not meet the diagnosis of Dependence, the interviewer would go back and screen for Alcohol Abuse. The same follows for Substance Dependence and Substance Abuse. All combinations of the diagnoses Alcohol Abuse, Alcohol Dependence, Substance Abuse and Substance

Dependence were represented. If participants met the criteria for any of these four disorders, they were placed in the clinical sample for analysis. Participants who did not meet criteria for any of these diagnoses were placed in the non-clinical sample.

RELIABILITY

Using Cronbach's coefficient alpha, a reliability analysis was computed in order to determine the reliability of the DAAD screening instrument developed by the researcher. Springer et al. (2002b) offer guidelines for acceptable reliability coefficients when using scales with individual clients in clinical decision making:

Below .70 is unacceptable
70-.79 is undesirable
80-.84 is minimally acceptable
.85-.89 is respectable
.90-.95 is very good
Over .95 is excellent

The total alpha of the pilot study scale was .88.

The small sample size of the pilot limited the interpretations that can be made about the items' functioning; however, the pilot provided a preliminary look at the scale's performance.

The following table lists the items, the corrected item-total and the Alpha-if-item deleted column:

Table 2. Pilot sample corrected item-total correlation

Item	Corrected Item-Total Correlation	Alpha-if-Item Deleted
1). Have you or someone else been hurt because of your drinking/drug use? (Such as falling over, a car wreck, getting into a fight.)	.3802	.8802
2). Have others bothered you by criticizing your drinking/drug use? (Such as a friend complains about your drinking/drug use.)	.4242	.8788
3). Have you ever felt bad or guilty about your drinking/drug use? (Such as thinking "I should not drink/drug" or "I wish I did not drink/drug".)	.2780	.8844*
4). Have you ever had a drink/drugs first thing in the morning to get rid of a hangover? (Such as after using alcohol or drugs, you wake up the next day. You feel awful, such as a stomachache or headache. You use more alcohol or drugs to make yourself feel better.)	.5002	.8761
5). Have you ever found you could not remember part or all of a day when you drank/drugged?	.7346	.8668

6). Were you ever in a physical fight when drunk/high?	.6011	.8725
7). Were you ever in a verbal fight when drunk/high?	.3867	.8805
8). Have you struggled to stop drinking or using drugs in the past, but could not?	.6115	.8720
9). Did a friend or boyfriend/girlfriend ever leave because of your drinking/drug use?	.7138	.8677
10). Have you ever had trouble at work because of drinking or drug use? (Such as late to work, arguing with boss or co-workers, doing lousy work, papers piling on desk, and you can not keep up. It is because of your drinking or drug use.)	.6130	.8738
11. When you are stressed, do you use drinks or drugs to help you relax?	.6032	.8720
12). Do you hang out with friends and groups because they like to drink/drug?	.5374	.8746
13). Is it hard to stop drinks or drugs because you are afraid you will lose your friends?	.4443	.8781

14). Have the police stopped you more than once for drinking/drug use?	.2602	.8832*
15). Is your name sign related to drinking/drugs? (Such as, your name is "Franky" with an 'F' on the chest. Your friends change it to insult or tease you. "Your name is 'smoke marijuana.'").	.5522	.8744
16). Do you keep away from groups for help with drinking/drugs because others might see you?	.4830	.8768
17). Can you socialize without being drunk or high? (You want to socialize and but have not yet used drink/drugs. In order to join in, you think, "Why not?" and you use drinks/drugs.)	.4248	.8790
18). Is there gossip about your drinking/drugging in the Deaf community?	.6547	.8704
Total Alpha		.8818

As indicated by an asterisk (*), items #3 and #14 appeared to be potential candidates for deletion when examining the alpha-if-item deleted column. Although the results of the pilot study must be viewed cautiously due to sample size, no items from the pilot study had a corrected item-total correlation that indicated the item should be removed from future testing of the screening. Therefore, all 18 items were retained for the final validation.

Items were all positively stated, which meant that a participant with a substance abuse disorder should answer "yes" to each item. All items show a positive corrected item-total correlation, but a few of the items were negatively correlated with each other. Item #14 correlated negatively with items #1, #2 and #11. Item #14, "Have the police stopped you more than once for drinking/drug use?" was a problematic item because it is difficult to express in sign "more than once" without signing "over and over." Feedback was gathered from the dissertation committee about the intent of the item. On the day of the filming, the video translation team also had much discussion about the accurate way to convey the item's meaning. Further testing of the item was needed on a larger sample.

Items #6 and #7 show a difference in their alphas. As discussed in Chapter Three, these two items were modified from the same MAST item written for hearing people, "Have you gotten into fights when drinking?" Preliminary data indicated that "physical fight" was a stronger item than the "verbal fight" item. The final validation would determine which item, if either, is more effective in screening substance abusers.

The Standard Error of Measurement (SEM) was computed for the scale. SEM is the standard deviation of the error, averaged for the group. Therefore, SEM is an estimate of how far true scores may be from the observed score, and is less influenced by variances and standard deviations than alpha. A low SEM indicates good measurement error characteristics. Hudson (1999) suggests that the SEM be 5% or less of the range of possible scores – for the DAAD, it should be less than 3.6. SEM for the pilot study scale was calculated at 1.66, another indicator of the scale's reliability.

VALIDITY

Two types of validity were considered for the DAAD: content validity and construct validity. Content validity refers to how well the items represent the construct. The procedures for establishing content validity using expert review and team discussion about item translation were outlined in chapter three.

Construct validity was computed in the form of convergent and discriminant validity. Convergent validity refers to how well a measure corresponds with constructs which are theoretically thought to be associated with one another. In the case of the DAAD, convergent validity was examined with Module A of the SCID, which screens for mood disorders, because major depression has been shown to co-occur with substance abuse (Kessler & Walters, 2002). A significant relationship was not found between major depression (Module A of the SCID) and score (the overall number of DAAD "yes" answers) ($r = .-.091$, $p = .665$). However, given that most of the data were collected at social service agencies for the Deaf, it is likely that individuals with affective disorders were over-represented in the study.

Discriminant validity is the degree to which an instrument does not correlate with constructs with which one would not theoretically expect the instrument to correlate. It is assessed the same way as convergent validity, only the scale developer hopes for non-significant or lower correlations. Because substance abuse can be found among individuals of all ages, there should be no correlation between the clinical group and age. Discriminant validity was assessed for by examining the correlation between the DAAD's score and age; the relationship was not significant ($r = .036$, $p = .864$).

Known groups validity was computed in order to determine the extent to which scores on the new scale are able to detect differences between the two groups. Prior to running the ANOVA, however, the researcher tested the assumptions of ANOVA: 1) that the groups are normally distributed for the dependent variable (score), and 2) that both groups had equal population variances (Springer et al. 2002b; Stephens, 1996). This required running the Two-Independent-Samples Kolomogorov-Smirnov Z Test and the Levene Test for Homogeneity-of-Variance. The Kolomogorov-Smirnov tests for normality, and should be significant. When conducted on the DAAD, the Kolomogorov-Smirnov Z Test was not significant at the .05 level ($Z = .695$, $p = .719$). This indicates that the data should be transformed. The Levene Test verifies that the groups have similar population variances (Springer et al., 2002b; Stevens, 1996). The researcher hopes that the Levene test is not significant. The Levene statistic for the DAAD was not significant (p.=.06).

Using Eta statistic produced by ANOVA as the validity coefficient, a preliminary evidence of known groups validity was revealed (Eta = .754, $Eta^2 = .568$) and was significant at the .05 level.

CHANGES FOR FINAL VALIDATION

Because the SCID has not been tested for use with Deaf individuals, modifications had to be made over the course of the pilot study. Many Deaf individuals had no problems following the diagnostic interview, but for some, perhaps those who are low functioning, there was concern about their ability to give accurate answers. For example, some participants merely agreed with every question, which may result from

"bluffing" or an acquiescent response set. "Bluffing" occurs when Deaf or hard-of-hearing individuals nod their head and pretend to understand what is said. It is fairly common, and those who work with the Deaf often use comprehension checks to ensure their message was understood. An acquiescent response set occurs when the respondent agrees with most of the questions, regardless of what the questions are actually asking (Rubin & Babbie, 1997). Regardless of the source, answering every question "yes" would obviously result in misdiagnosis if the respondent had those not actually had experiences with alcohol or drugs.

The researcher decided that for individuals who may be lower functioners or who answered "yes" to all questions too readily, it would be better to state all questions both positively and negatively: "Has your drinking gotten you into trouble with the law, OR no, your drinking has never gotten you into trouble with the law." Individuals were more likely to think for a moment and not simply answer "yes."

Two questions became useful for determining who might be low functioning and thus needed items signed positively and negatively. "Age" was the first question for all participants. All sites were told that all participants must be over 18, but if for some reason this was not the case, the interview could be stopped immediately. Some low functioners did not know their ages. The researcher noticed that although unintended, the next two questions, "Race/ethnicity" and "Language preference" caused trouble for the low functioners, even with expansion ("You know, are you black, white, Hispanic, or what?"). By way of contrast, individuals who answered, "Well, my mother is part Hispanic and German and my father is Hispanic, so I guess I'll say Hispanic" would be less likely to simply say "yes" to all of the SCID questions. Participants who did not

know their ages or race/ethnicity often had trouble answering "language preference," even when given choices, ("You know, ASL, SEE, PSE, voice and sign or what?"). Participants who did not understand "Race/ethnicity" and/or "Language preference" questions were given the SCID with items worded positively and negatively for all items, which may have increased the accuracy of the SCID.

For these participants, the concern was their ability to understand the purposes of the interview. While the researcher assessed the participants individually and could make adjustments, the video could not accommodate the needs of low functioners. The research assistant administering the video portion offered to replay items during the screening if the participant seemed perplexed about the item, or just looked lost. For Deaf individuals who had an oral background or who preferred speech and sign, the research assistant reminded them that captions were available as well. Naturally, some participants asked for replays, and some stated that they understood. It is unclear how many individuals just circled "yes" or "no" without understanding.

Many Deaf individuals, regardless of their functioning level, had a difficult time understanding the alcohol screening question: "Have you ever had five or more drinks on one occasion?" This question caused problems early in the pilot study, and the researcher consulted the signing member of the dissertation committee about how to make it more clear in ASL (D. Dittfurth, personal communication, June 25, 2004). Some individuals could not understand the question because they simply have never drank that much on one occasion, and others could not understand the concept as expressed in ASL "DRINK, DIMINISH-DRINK, FIVE, YOU BEFORE FINISH?"

Screening for Major Depression also caused difficulty because the first question "Has there been a period of time when you were feeling depressed most of the day, nearly every day?" was translated as "HAPPEN BEFORE, YOU FEEL DEPRESSED, LOW, [flat c hand on chest] OR SAD, ALMOST EVERYDAY DAY Q" Every single person said yes, which is logical -- after all, who hasn't been depressed? It was difficult for the researcher to sort out differences between Major Depression, a fight with a friend that was shortly resolved, and grief. A Deafness specialist who had training on the SCID was consulted. Her recommendation was if the individuals answered yes, emphasize the time period of two weeks to distinguish those who needed further screening, such as "DEPPRESSED, ONE WEEK, TWO WEEKS?" (M. Torres, July 26, 2004).

FINAL VALIDATION

For the final validation, data were collected at five sites across the United States. The sites were chosen for their location in the United States, as well as their services to Deaf substance abusers. The sites, in order of sampling, were National Deaf Academy in Mount Dora, Florida, The New York Society for the Deaf in New York City, Southwest Collegiate Institute for the Deaf in Big Spring, Texas (an all-Deaf community college in northwestern Texas which recruits from the western United States), Communication Services for the Deaf in San Antonio, and Austin-Travis County Services for the Deaf in Austin. At all sites, clients (substance abusing and non-substance abusing) were encouraged to participate. Deaf staff were also invited to participate at each location as part of the study. The interviews took about 30 minutes total, 15 minutes for each part.

Table 3. Demographics of Final Sample

	N	131
Gender		%
Female	66	50.4
Male	65	49.6
Age	N	%
18-30	59	45.0
31-40	36	27.5
41-50	23	17.6
51-60	9	6.9
61-70	3	2.3
71-80	1	.8
Ethnicity	N	%
Caucasian	70	53.4
African-American	32	24.4
Hispanic	24	18.3
Asian	4	3.1
“Mixed”	1	.8

Language Preference	N	%
ASL	70	53.4
PSE	13	9.9
SEE	16	12.2
Speech and Sign	30	22.9
Other	2	1.5
Age Deafened	**N**	**%**
Birth	80	61.1
Under 2 years old	28	21.4
2-6 years old	14	10.7
6 or older	9	6.9
Level of Education	**N**	**%**
Elementary school or less	3	1.2
Middle school	7	5.3
High school	23	17.6
Graduated High School	53	40.5
Some college	26	19.8
College Degree	12	9.2
Grad School	7	5.3

Type of Education	N	%
Residential	68	51.9
Mainstream	47	35.9
Mixed	12	9.2
Other	2	1.5
No education	2	1.5
Primary Signer in Family	**N**	**%**
No one	62	47.3
Mother	36	27.5
Sibling	17	13
Father	7	5.3
Other	3	2.3
Deaf Family	6	4.6
Member of Deaf Community	**N**	**%**
Yes	81	61.8
No	21	16
“Sort of”	29	22.1
Substance Abuse Diagnosis	**N**	**%**
No	78	59.5
Yes	53	40.5

RELIABILITY

A reliability analysis was conducted of the 18 DAAD items using Cronbach's coefficient alpha. Results are as follows:

Table 4: Final sample corrected item-total correlation

Item	Corrected Item-Total	Alpha-if-Item Deleted
1). Have you or someone else been hurt because of your drinking/drug use? (Such as falling over, a car wreck, getting into a fight.)	.4976	.8913
2). Have others bothered you by criticizing your drinking/drug use? (Such as a friend complains about your drinking/drug use.)	.5893	.8883
3). Have you ever felt bad or guilty about your drinking/drug use? (Such as thinking "I should not drink/drug" or "I wish I did not drink/drug".)	.4449	.8934
4). Have you ever had a drink/drugs first thing in the morning to get rid of a hangover? (Such as after using alcohol or drugs, you wake up the next day. You feel awful, such as a stomachache or headache. You use more alcohol or drugs to make yourself feel better.)	.6303	.8870

5). Have you ever found you could not remember part or all of a day when you drank/drugged?	.4876	.8919
6). Were you ever in a physical fight when drunk/high?	.5085	.8910
7). Were you ever in a verbal fight when drunk/high?	.5447	.8898
8). Have you struggled to stop drinking or using drugs in the past, but could not?	.6350	.8867
9). Did a friend or boyfriend/girlfriend ever leave because of your drinking/drug use?	.7472	.8831
10). Have you ever had trouble at work because of drinking or drug use? (Such as late to work, arguing with boss or co-workers, doing lousy work, papers piling on desk, and you can not keep up. It is because of your drinking or drug use.)	.4268	.8932
11. When you are stressed, do you use drinks or drugs to help you relax?	.5634	.8892
12). Do you hang out with friends and groups because they like to drink/drug?	.5639	.8891

13). Is it hard to stop drinks or drugs because you are afraid you will lose your friends?	.5413	.8899
14). Have the police stopped you more than once for drinking/drug use?	.5937	.8889
15). Is your name sign related to drinking/drugs? (Such as, your name is "Franky" with an 'F' on the chest. Your friends change it to insult or tease you. "Your name is 'smoke marijuana.'").	.4771	.8918
16). Do you keep away from groups for help with drinking/drugs because others might see you?	.4596	.8923
17). Can you socialize without being drunk or high? (You want to socialize but have not yet used drink/drugs. In order to join in, you think, "Why not?" and you use drinks/drugs.)	.3383	.8963*
18). Is there gossip about your drinking/drugging in the Deaf community?	.6332	.8867
Total Alpha		.8961

Item #17 was a candidate for deletion for two reasons. First, the item had a low corrected-item total correlation of .3383, and deleting the item would slightly raise the reliability coefficient. Also, a visual scan of the data indicated that 11 respondents

changed their answers or wrote a comment next to the item such as “Unclear” or “What?” This item was deleted and the analysis rerun.

Table 5: Final sample corrected item-total correlation

Item	Corrected Item-Total	Alpha-if-Item Deleted
1). Have you or someone else been hurt because of your drinking/drug use? (Such as falling over, a car wreck, getting into a fight.)	.5054	.8920
2). Have others bothered you by criticizing your drinking/drug use? (Such as a friend complains about your drinking/drug use.)	.5919	.8890
3). Have you ever felt bad or guilty about your drinking/drug use? (Such as thinking “I should not drink/drug” or “I wish I did not drink/drug”.)	.4526	.8943
4). Have you ever had a drink/drugs first thing in the morning to get rid of a hangover? (Such as after using alcohol or drugs, you wake up the next day. You feel awful, such as a stomachache or headache. You use more alcohol or drugs to make yourself feel better.)	.6113	.8884

5). Have you ever found you could not remember part or all of a day when you drank/drugged?	.4893	.8929
6). Were you ever in a physical fight when drunk/high?	.5179	.8916
7). Were you ever in a verbal fight when drunk/high?	.5418	8908
8). Have you struggled to stop drinking or using drugs in the past, but could not?	.6415	.8872
9). Did a friend or boyfriend/girlfriend ever leave because of your drinking/drug use?	.7588	.8831
10). Have you ever had trouble at work because of drinking or drug use? (Such as late to work, arguing with boss or co-workers, doing lousy work, papers piling on desk, and you can not keep up. It is because of your drinking or drug use.)	.4379	.8939
11. When you are stressed, do you use drinks or drugs to help you relax?	.5600	.8902
12). Do you hang out with friends and groups because they like to drink/drug?	.5538	.8904

13). Is it hard to stop drinks or drugs because you are afraid you will lose your friends?	.5499	.8905
14). Have the police stopped you more than once for drinking/drug use?	.5850	.8899
15). Is your name sign related to drinking/drugs? (Such as, your name is "Franky" with an 'F' on the chest. Your friends change it to insult or tease you. "Your name is 'smoke marijuana.'").	.4713	.8929
16). Do you keep away from groups for help with drinking/drugs because others might see you?	.4383	.8939
18). Is there gossip about your drinking/drugging in the Deaf community?	.6382	.8872
Total Alpha		.8969

Deleting item #17 improved the scale only slightly. With 17 items remaining, the scale was longer than originally planned. The challenge was to shorten the scale while improving the reliability. Deleting additional items would likely cause the alpha to drop. Therefore, deletion of items would have to be made based upon criteria other than the item's alpha.

Two criteria were used to delete additional items. First, all items with a corrected item-total correlation under .45 were deleted, eliminating items #10 and #16. Item #10 had a low alpha, but was a good candidate for deletion for other reasons. Item #10 is the

longest item, which makes it inappropriate for a brief screening. A more compelling reason was that the item was confusing because of the expansion examples used. The assistant reported watching the participants nod and shake their head, back and forth, while watching this item. So, the item asks, "Have you ever had trouble at work because of drinking or drug use? [Participant might shake head.] Such as late to work [nod], arguing with boss or co-workers [shake], doing lousy work [nod], papers piling on desk [shake], and you can not keep up [nod]. It is because of your drinking or drug use [shake]." In other words, the way the item was translated into ASL, the item became more than double-barreled.

The second criteria used to determine final items for the scale was to ensure that the scale covered the range of content that represented dimensions of substance abuse: 1) physiological dependence, 2) psychological dependence, 3) social ramifications. Because the scale is geared specifically for individuals who are culturally Deaf, the scale contains a fourth construct that focuses on a Deaf substance abuser's experiences. Items that represented these four constructs would create a balanced scale.

While the scale creator must make decisions with an eye towards the fit of all of the pieces, it can be difficult to be neutral. Factor analysis was used as a guide to view the scale more objectively. Communalities from a factor matrix were examined to determine which items would create the most homogenous scale.

Table 6: Scale Communalities

	Initial	Extraction
DAAD1	.397	.322
DAAD2	.416	.396
DAAD3	.385	.376
DAAD4	.594	.526
DAAD5	.361	.347
DAAD6	.430	.438
DAAD7	.483	.566
DAAD8	.546	.561
DAAD9	.660	.660
DAAD10	.302	.271
DAAD11	.545	.697
DAAD12	.450	.371
DAAD13	.461	.398
DAAD14	.529	.482
DAAD15	.420	.411
DAAD16	.462	.381
DAAD17	.311	.644
DAAD18	.455	.459

Based on this method, numbers 2, 4, 6, 8, 9, 11, 12, 13, 14 and 18 demonstrated the most communality. Problematic items, such as #17 and #10, demonstrated low communalities. The ten items with the most communality were reviewed for content:

Table 7: Final sample corrected item-total correlation with content

Item	Alpha	Content
2). Have others bothered you by criticizing your drinking/drug use? (Such as a friend complains about your drinking/drug use.)	.5647	Social
4). Have you ever had a drink/drugs first thing in the morning to get rid of a hangover? (Such as after using alcohol or drugs, you wake up the next day. You feel awful, such as a stomachache or headache. You use more alcohol or drugs to make yourself feel better.)	.6267	Dependence
6). Were you ever in a physical fight when drunk/high?	.4767	Psychological
8). Have you struggled to stop drinking or using drugs in the past, but could not?	.6641	Dependence
9). Did a friend or boyfriend/girlfriend ever leave because of your drinking/drug use?	.7559	Social
11. When you are stressed, do you use drinks or drugs to help you relax?	.5289	Psychological
12). Do you hang out with friends and groups because they like to drink/drug?	.5725	Deaf
13). Is it hard to stop drinks or drugs because you are afraid you will lose your friends?	.5606	Deaf
14). Have the police stopped you more than once for drinking/drug use?	.5463	Social (Legal Consequences)

18). Is there gossip about your drinking/drugging in the Deaf community?	.6169	Deaf
Total Alpha	.8720	

The items that revealed communalities based upon factor analysis showed a good balance between psychological dependence, physiological dependence, social ramifications, and Deaf items. Note that many of the "Deaf" items are also "Social" items, because of the strong emphasis on social life in the Deaf community.
Item #6 "Were you ever in a physical fight when drunk/high?" has been shown in earlier studies to not be sensitive for females (cite). Therefore, the researcher removed it and replaced it with Deaf content item, #15, "Is your name sign related to drinking/drugs?" which has the next highest communality.

The final scale containing the 10 items is below, with alpha levels for each item if deleted:

Table 8: Final English scale

Item	Corrected Item-Total	Alpha-if-Item Deleted	Content
2). Have others bothered you by criticizing your drinking/drug use? (Such as a friend complains about your drinking/drug use.)	.5557	.8617	Social
4). Have you ever had a drink/drugs first thing in the morning to get rid of a hangover? (Such as after using alcohol or drugs, you wake up the next day. You feel awful, such as a stomachache or headache. You use more alcohol or drugs to make yourself feel better.)	.6246	.8561	Dependence
8). Have you struggled to stop drinking or using drugs in the past, but could not?	.6752	.8517	Dependence
9). Did a friend or boyfriend/girlfriend ever leave because of your drinking/drug use?	.7464	.8460	Social
11. When you are stressed, do you use drinks or drugs to help you relax?	.5445	.8630	Psychological

12). Do you hang out with friends and groups because they like to drink/drug?	.5506	.8620	Social
13). Is it hard to stop drinks or drugs because you are afraid you will lose your friends?	.5585	.8611	Deaf
14). Have the police stopped you more than once for drinking/drug use?	.5609	.8616	Social (Legal Consequences)
15). Is your name sign related to drinking/drugs? (Such as, your name is "Franky" with an 'F' on the chest. Your friends change it to insult or tease you. "Your name is 'smoke marijuana.'").	.4712	.8672	Deaf
18). Is there gossip about your drinking/drugging in the Deaf community?	.6203	.8563	Deaf
Total Alpha		.8718	

The Standard Error of Measurement (SEM) was computed for the final scale.

$$\text{SEM} = \sigma_{\text{o}} \sqrt{(1 - r_{tt})}$$

where

σ_{o} =standard deviation of observed scores, and

r_{tt} = coefficient alpha

For the DAAD, it should be less than 3.6, and it was calculated at 1.10, another indicator of the scale's reliability.

VALIDITY

Construct validity was computed in the form of convergent and discriminant validity. Convergent validity was established using the Major Depression section of Module A of the SCID. A significant relationship was found between major depression and score on the DAAD (r =.305, p = .000). A moderate correlation is desirable because if the two scales correlate too highly, the DAAD would actually be measuring depression, not substance abuse. Discriminant validity was assessed by examining the relationship between age and score and no significant correlation was found (r = .-079, p = .367). Further evidence of convergent construct validity was evidenced by the correlation between score and diagnosis in relation to one of the substance use disorder categories. There is a significant correlation on the DAAD for individuals who have an alcohol dependence diagnosis (r = .555, p =.000, α = .01) or a substance dependence diagnosis (r = .569, p = .000, α = .01). However, the correlation between score and diagnosis for participants with alcohol abuse and substance abuse was not significant (r = .023, p = .793, α = .01) (r = .042, p =.637, α = .01).

Known groups validity was computed using ANOVA, with the Eta score as the validity coefficient. The Two-Independent-Samples Kolomogorov-Smirnov Z Test, conducted on the DAAD was significant (Kolomogorov-Smirnov Z = 2.293, p = .000). The Levene Test for Homogeneity-of-Variance indicated a significant relationship at the .05 level (Levene = 8.152, p.=.000), indicating unequal variances in the groups. The data

were transformed using the square root transformation, after which the Levene test was no longer significant (Levene = 1.989, p. = .161). The Kolomogorov-Smirnov Z Test was re-run on the transformed data and was still significant at the .05 level (Kolomogorov-Smirnov Z = 2.412, p = .000).

Known-groups validity was evidenced via using ANOVA on the transformed data, with the Eta statistic as the validity coefficient. Eta was significant at the .05 level (Eta = .626, Eta^2= .392).

RELATIONSHIPS BETWEEN DEMOGRAPHICS AND FINAL SCALE

Using the transformed data, the relationship found between gender and the score on the final scale was significant (t = 11.31, p.= 000). When gender was controlled, the final score on the scale was still significant (r = .528, p.=.000).

Other demographics showed no significant correlations: age (r = .-131, p = .137); race/ethnicity (F = 1.689, p. = .157), age when deafened (r = -.095, p = .281); language preference (F = .651, p. = .627), primary communicator in family (F = 1.135, p = .346); and member of Deaf community (F = 1.618, p = .188). Highest year of education was non-significant, (F = .988, p = .464), but the Levene statistic was, despite using transformed data. However, when the data were collapsed into "education levels," (i.e., Elementary school or less, middle school or less, etc., instead of using the actual number of years) the ANOVA nor the Levene were not significant (F = .650, p = .690; Levene = 1.122, p = .354). The Levene test is also significant for type of education (residential, mainstream, etc). (Levene = 4.399, p = .006; F = 3.238, p = .024). Collapsing data into

"Mainstream" and "all others" results in a non-significant Levene (Levene = 1.380, p = .242; F = .907, p = .343).

CONCLUSION

There is good evidence that supports the validation of the DAAD on a small sample (N=131). Reliability for the final 10-item scale is .8718, which Springer et al. (2002b) characterize as "respectable." The SEM was low, and indicating low measurement error (Springer et al., 2002a).

Construct validity was established via a moderate significant relationship between major depression and score, and discriminant validity was established via a non-significant relationship between age and score. Further evidence of convergent construct validity was evidenced by the correlation between score and diagnosis with DAAD scores significantly correlated with alcohol and substance dependence diagnoses.

Known groups validity was established for those with an alcohol dependence diagnosis or a substance dependence diagnosis but not for those with alcohol abuse or substance abuse. There was a significant relationship between gender and score on the final scale, but when gender was controlled for, the score on the final scale was still significant. None of the other demographics showed significant correlations.

Chapter Five provides an in-depth review of the findings, an analysis of how the demographics and sampling method may have affected the results, as well as a discussion of methodological considerations for future researchers.

Chapter Five -- Discussion

INTRODUCTION

The Deaf community lacks a validated instrument in ASL to test for substance abuse (Guthmann & Sandberg, 1998). The aims of this dissertation were to create a scale that was culturally sensitive for Deaf individuals, used ASL, and was appealing to the Deaf community. Building such a scale rested largely on the ability to convey the meaning of items in ASL. The following sections review the demographics of the populations, the results of the analyses of the data, decisions made to create the scale, the limitations of the study, and the implications for social work and related helping professions.

STUDY DEMOGRAPHICS

To collect the sample for the final validations, the researcher had two goals. The first goal was to test the video on as many adult substance abusers as possible. Because it is impossible to know who will meet the criteria for a lifetime history of substance abuse/dependence, the researcher simply tried to recruit as many Deaf adults as possible. The second goal was to capture as heterogeneous a population as possible. To capture this heterogeneous sample, the researcher informed sampling sites of her objective and looked for Deaf individuals who were atypical, particularly in categories that needed rounding out, such as age, race or ethnicity, education, and Deaf parentage (for example, the researcher sought out Deaf seniors). The demographic composition of the sample is

important because a varied sample would support the usefulness of the screening across Deaf populations.

The study sample was balanced between males (49.6%) and females (50.4%). For the variable age, 45% of participants were in the 18-30 age bracket, and the numbers of participants in each succeeding age bracket lessened (ages 31-40 was 27.5%, ages 41-50 was 17.6%, ages 51-60 was 6.9%, ages 61-70 was 2.3% and ages 71-80 was .8%).

The researcher wanted the ethnic make-up of the study sample to be representative of the ethnic make-up of the United States because substance abuse studies traditionally over-represent Caucasian and/or male populations. Also, a representation of people of diverse races and ethnicities was important because minority populations reportedly use different drug signs than commonly seen by counselors and interpreters (Woodward, 1980). During the study, the researcher observed some variety in drug signs used by minority populations. The current racial and ethnic make-up of the United States is 71.4% Caucasian, 12.4% African-American, 11.9% Hispanic, and 4.56% American Indian and Asian Pacific Islander (combined) (U.S. Census Bureau, 2001). Though it is difficult to obtain a sample that perfectly reflects the racial/ethnic make-up of the U.S., the study sample did reflect diverse racial and ethnic representation. The respondents were: 53.4% Caucasian, 24.5% African-American, 18.3% Hispanic, 3.1% Asian, and .8% reported "mixed" decent.

The DAAD was developed for individuals who are culturally Deaf. As noted previously, defining a "Deaf person" is not without problems. The choice for this study was to rely on self-report of cultural Deafness since there is no official way to be culturally Deaf, and to collect indirect data to indicate cultural Deafness. Other

researchers have similarly looked to indirect cultural participation data in order to figure out who is "deaf" and who is "Deaf" (such as number of deaf friends, use of signing, involvement in Deaf activities and number of years at deaf school) (Berman et al., 2000).

Because ASL is the cornerstone of Deaf culture (Lane et al., 1996), language preference was chosen as the first such determinant. Language preference was self-determined and the problems of assigning this category have been discussed. The choice of the largest group in the sample (53.4%) was "ASL" but it is important to note that the next highest category is "speech and sign" (22.9%). The thirty participants who chose the "speech and sign" category were likely to be hard-of-hearing or late-deafened adults (LDAs). The scale was created for individuals who are culturally "Deaf," not individuals who are "deaf." Some hard-of hearing participants may have been so since birth, attended Deaf school, and have associated with the Deaf community. They may have chosen the "speech and sign" category because of their ability to use residual hearing to aid communication. On the other hand, some individuals who chose "speech and sign" had recently lost their hearing, do not sign and do not associate with the Deaf community.

Items of the DAAD such as item #18 ("Is there gossip about your drinking/drugging in the Deaf community?") may or may not have applied to the 30 participants who chose "speech and sign," because these participants may or may not associate with the Deaf community. Retaining the 30 participants who chose "speech and sign" as their method of communication may have lowered the reliability of items that were culturally bound, as listed below:

#12, “Do you hang out with friends and groups because they like to drink/drug?”

#13, “Is it hard to stop drinks or drugs because you are afraid you will lose your friends?”

#15, “Is your name sign related to drinking/drugs? (Such as, your name is ‘Franky’ with an ‘F’ on the chest. Your friends change it to insult or tease you. ‘Your name is “smoke marijuana.’).”

#16, “Do you keep away from groups for help with drinking/drugs because others might see you?”

#17, “Can you socialize without being drunk or high? (You want to socialize and but have not yet used drink/drugs. In order to join in, you think, ‘Why not?’ and you use drinks/drugs.).”

#18, “Is there gossip about your drinking/drugging in the Deaf community?”

Slightly over half of the participants listed type of education as “residential” (51.9%), which may indicate cultural Deafness because a residential Deaf school is usually an individual’s first exposure to the Deaf community. Attending “mixed programs,” which are Deaf programs housed in hearing school, was reported by 9.2% of participants. These individuals would also likely be strong candidates for being culturally Deaf. The remainder were mainstreamed (35.9%), or attended “other” schooling such as home schooling (2.3%). Two participants had immigrated to the United State and had no formal education.

It seemed that the easiest way to determine if participants were culturally Deaf would be to ask them if they were a members of the Deaf community. Therefore, all participants were asked a forced choice yes/no question. However, it was discovered that it was not this simple. Throughout the study, participants frequently stated “half and half.” Rationales were given, such as being in a professional role (an administrator),

which means not associating outside of work with Deaf individuals who might be clients. Other participants who answered "half and half" associated with certain members of the Deaf community but not others, or had dropped out of the Deaf community but were getting involved again. Hard-of-hearing and LDA individuals were likely to report wanting to associate with the Deaf community but being marginally accepted because of their inability to sign. Finally, some participants did not associate with other Deaf individuals at all because they preferred to keep their private lives to themselves, but they may have attended a Deaf church. Because of the variety of explanations, this answer was not seen as a way to partition-out participants during the final analyses.

Deafness research has struggled with an overrepresentation of college-educated participants, which limits generalizability (Brauer, 1992, Lipton & Goldstein, 1997; Steinberg et al., 1998). Brauer (1992) believes that that college-educated Deaf individuals are more likely to participate in research because they are aware of the need to advance mental health research for the Deaf. Because of the difficulty in defining a "Deaf person," it is to get an "average" Deaf anything. In order to have a reference point for what average education levels of the Deaf might be, we can look to Lane et al.'s (1996) discussion of the dropout rates of deaf students. The lowest is the report of 17%-23% dropout rates for students in residential school settings. For students in a self-contained classroom in regular public schools, the number jumps to 54%. The highest drop out rate is 57% for Deaf students who have additional disabilities such as behavior disorders, learning disabilities or blindness. (See also the discussion by Allen, 1994, on the same topic.) The sample used to validate the DAAD is more similar to the educational levels of the Deaf reported by Lane et al. (1996). In this study, 24.1% had

less than a high school education and 40.5% of participants had graduated from high school. In total, 64.5% of the participants in this research had a high school education or less.

Individuals who originated from 28 states participated in the study. The researcher's aim was to see if signers across the country could understand the DAAD. According to Doug Dittfurth (personal communication, July 31, 2003), regionalized signs have traditionally been the "proverbial brick wall" of standardized scale construction for the Deaf. However, this may be changing. In his capacity as an interpreter for Deaf callers for Sorenson, a video relay company, Dittfurth reports that only local signs, like San Antonio's Alamodome, are problematic (D. Dittfurth, personal communication, March 18, 2004). He believes that with the widespread use of videophones, regionalized signs are becoming less problematic. This belief matches participant's reports that they were able to understand the signer on the DAAD video, whereas in the past, the video may have only been understood by Texas signers.

Participants from five different countries were screened with the DAAD. These individuals reported that they understood the DAAD to varying degrees, depending on when they immigrated to the United States, the use of ASL in their country of origin, and their exposure to drug and alcohol signs. The countries of origin of these five individuals will not be documented in the final results because of the possibility of a breech of confidentiality. Individuals not familiar with Deafness may not understand how small the Deaf world is, so a fictitious example is in order. Suppose one participant was reported to have immigrated from India. How many Deaf Indians live near one of the five sampling sites? By knowing the five sampling sites, it is very likely that readers could

know the identity of the participant, or could certainly find out. Using this rationale to lessen the risk of revealing individual participants, all collected data were complied into one data set and not broken down by site.

Obtaining data from participants who were low functioners was an issue raised in the pilot study. The strategy developed from the pilot study was to identify participants who had difficulty answering "race/ethnicity" and "language" as possible low functioners. The assistant independently noted individuals who appeared lost or confused during the video portion to the screening (e.g., they started to circle an answer before the video was shown). These notes were later compared and the case numbers were documented to allow separate analyses to be run if needed. In total, 12 participants were noted by both the researcher and the assistant to appear to be low functioning Deaf individuals. However, in the absence of supporting information to verify low functioning, the notations were merely impressions from the researchers. Therefore, the decision was made to retain these individuals as part of the study.

Participants were asked, "Who was the primary signer in your family?"; 47.3% participants reported "no one." Other participants reported the primary signer to be "mother" (27.5%), "sibling" (13%), "father" (7%), and "other," like a Grandparent or Aunt or Uncle (2.3%). For the final validation, a category had to be added – participants with Deaf families. Six individuals from Deaf families were interviewed for the study (4.6%). This category is actually a combination of two groups: participants whose entire family was Deaf, and individuals who had hearing parents but one or more deaf siblings. In the latter case, it is not uncommon to find deafness scattered throughout the family, such as a few deaf siblings, a deaf aunt, and/or a deaf distant cousin.

SUBSTANCE ABUSE: RELIABILITY AND VALIDITY

The purpose of the study was to validate the DAAD with a sample that contained a sufficient number of Deaf individuals with substance use disorders. Because alcohol and drug use disorders are reported to be stigmatized in the Deaf community, participants were recruited at agencies that had such services. The final result of the SCID interviews indicated that 59.5% of the participants had no lifetime history of a substance use disorder, and 40.5% had some type of a lifetime history of a substance use disorder. It must be emphasized that this population is not representative of the "average" Deaf population (i.e., it can not be generalized that 40.5% of the Deaf population has some type of lifetime history substance use disorder). Because the researcher was attempting to validate a scale for Deaf substance abusers, she sought out a clinical and non-clinical sample, not a random sample. For estimates of Deaf substance abusers, see the work done by Lipton and Goldstein (1997).

RELIABILITY ANALYSES. In order for a scale to be useful, it must first be reliable, which means that the scale consistently produces the same results (DeVellis, 1991). Initially, the DAAD produced a high coefficient alpha, which was only slightly lowered when the most problematic items were removed and the scale was shortened. The Cronbach's coefficient alpha level of .87 for the DAAD is noted as "respectable" per Springer et al. (2002b). Note that Cronbach's coefficient alpha for the initial CAGE was .85-.89, depending on the cut score (Ewing, 1974), and for the initial AUDIT with a USA sample was .85 (Saunders et al., 1993). Additional support for the DAAD's reliability is the low SEM, which is an indicator of the measurement error.

Researchers and practitioners using substance abuse screening tools for hearing individuals have struggled with making items as clear as possible in order to reduce random error which would affect reliability. For example, one study was interested in how participants' various interpretations of AUDIT items #5 ("How often have you failed to do what was normally expected from you because of drinking?") and #9, ("Have you or someone else been injured as a result of your drinking?") affected reliability. Using focus groups, data were gathered about what participants understood "failed to do" meant in #5 and "injured" meant in #9. Interestingly, the researchers clarified the terms using the same process of "expansion" used to clarify items for the DAAD:

> [For item #5] For example: (a) been late for class; (b) missed a class; (c) failed to complete an assignment on time; (d) been late for work; (e) missed practice of training for a sport; (f) let down a friend; (g) let down a family member (Kypri et al. 2002, 466)
>
> For item #9, the researchers specified a level of injury. It can be argued that offering specific examples for both hearing and Deaf scales helps to make the item as clear as possible.

In developing the DAAD, MAST item #9 ("Have you gotten into fights when drinking?") posed a similar problem because the respondent had to decide if "fight" means a physical or verbal fight. The item could not be ambiguous in the ASL translation, because there is no generic sign for fight; ASL contains words for either a "physical fight" (the signer mimes throwing a punch), or a "verbal fight" (yelling). After discussion with the translation team and the dissertation co-advisor, the single MAST item was filmed as two items for testing purposes, one for physical fight and one for verbal fight. As translated, the items were, #6 ("Were you ever in a physical fight when drunk/high?") and #7 ("Were you ever in a verbal fight when drunk/high?"). The final

validation showed that initially, the items' reliabilities were similar at .5085 and .5447, respectively. Item #6, "physical fight," was the tenth item to correlate highly with other items, creating the most homogenous scale. However, this item has been reported to be less sensitive for women because women are less likely to get into physical fights (Russell, 1994). No woman in this study with a substance abuse history answered "yes" to this item during the SCID screening, but eight answered "yes" to the item on the video. It seemed unwise to retain an item that tests inconsistently for women. The item was removed and replaced with the next closest ranking communality.

VALIDITY ANALYSES. Because the attributes that the scale developer is attempting to measure must be measured indirectly, evidence must be gathered to support that the new scale is valid (Springer et al., 2002a). Four types of validity were established: content, known groups, discriminant and convergent validity. Content validity was established via expert review early in the scale development process. However, the scale developer must be mindful of content validity and assessing the fit of each item for the development of the scale (Springer et al., 2002a). In order to further establish content validity, at each pilot and subsequent sampling site, the researcher kept notes about which items appeared problematic for those populations based upon participant feedback. Items that participants reported confusing were thought not to be a good fit with the overall scale.

The extent to which the DAAD could accurately distinguish those with substance use disorders from those without would speak to its clinical utility. To this end, known groups validity was established for participants who were diagnosed with alcohol dependence or drug dependence using the SCID. However, known groups validity was

not established for those with the diagnosis of alcohol abuse or drug abuse. This is similar to the CAGE, the first widely used alcohol screening tool, created by Ewing (1968), which works best as a screening tool for alcohol dependence. Years later, after substance abuse screening became more refined, the AUDIT was able to distinguish both alcohol abusers ("hazardous drinkers") and those with alcohol dependence ("harmful drinkers"). Because the DAAD is the first scale created for Deaf populations, it follows that the more obvious signs of substance dependence would be detected, as it was with the CAGE.

A moderate relationship was found between the variables depression and the DAAD score. Evidence of a moderate relationship indicates convergent validity. Would the relationship be stronger, it would indicate that the DAAD was actually measuring depression, not substance use disorders. Discriminant validity, which is further evidence of construct validity, was demonstrated when the relationship between age and score was examined and no significant correlation was found.

The DAAD does not currently have a cut score. Other substance use disorder scales (such as the CAGE, CAGE-AID, TWEAK, and AUDIT) have found that several cut scores were needed depending on gender, race/ethnicity and sometimes even the situation (such as a criminal justice or hospital setting) (Allen et al., 2001; Bradley et al.,1998; Brown & Rounds,1995; Buchsbaum et al., 1991; Dyson et al.,1998; Russell,1994; Volk et al.,1997).

DEMOGRAPHICS AND DAAD SCORES. The findings indicate that males were more likely to have a diagnosis of substance use disorders than females. This may also be due to the stigma for females to admit to a problem with substances (David and

DiNitto, 2005). Other demographics that proved to have no bearing on an individual's likelihood to have a substance use disorder were: age, race/ethnicity, education level, type of education, age when deafened, language preference, primary communicator in the family, and membership in the Deaf community. No other validated screenings exist to measure substance abuse in Deaf populations for comparison.

ROLE OF THE AGENCY

Many studies rely on agencies to assist them with data collection. For this study, the agencies did more than allow the researcher access to a captured Deaf population. They also acted as a recruiter, an organizer, and even host for the out-of-town locations. At all sites except one, a caseworker organized and recruited clients to participate in the study. The one site that provided just office space had the lowest turn out of any location, suggesting the need for an individual at the agency end to assist with recruitment. In Deafness research, it appears that a vital link between the researcher and the agency is needed in order to explain the purpose of research, the rules regarding confidentiality, and that the participant will be compensated for their time.

While the role of agencies is common to all research, in a Deafness study two unique features their contribution should be noted. First, because there are few agencies that serve the Deaf, such agencies must be flexible with the populations served. The agency must contend with a range of problems, situations, language, and functioning levels. These agencies were kind enough to extend this flexibility to the research project. Agencies that had AA groups allowed the research team access to members during group to participate in the study as it would have been difficult to conduct all ten interviews in a

row once the group was over, and every site allowed Deaf staff to participate during the work day or during the employee's break.

Second, in hearing research, if one agency is unable to be part of the project, the researcher can often choose among nearby agency. One has fewer sites to choose from in Deafness research, and in Deafness and substance abuse research, the number of sampling sites narrows still. Use of an old directory of Deafness substance abuse services indicated that many programs which once existed had either folded or were no longer serving Deaf clients. Two agencies contacted did not return emails, letters, or phone calls. Another agency was willing to accommodate a researcher, but needed to get approval through their own IRB, which was thought by the researcher to be a lengthy process. Yet another had a limited number of staff, creating scheduling conflicts which could not be resolved. One contacted agency could not accommodate the researcher because they were under an interim director and another agency's site director had just resigned.

Two agency-related issues need to be addressed as they may have influenced sampling. First, caseworkers for the Deaf are accustomed to being strong advocates. Despite the fact that the researcher asked all sites for a broad range of ages, education levels, races/ethnicities, and sign language preferences, some caseworkers reported they recruited individuals for the study because "they need the money." Doing so may have included some individuals and excluded others.

Second, some caseworkers were frustrated when the researcher informed them that the video was not developed to screen low functioners or visually-impaired Deaf clients. The common theme of their complaints was that "they are the ones who need it

the most." The researcher explained that scales are developed and normed on a specific population and no scale can be all things to all populations. At one site, a caseworker reported that she was deliberately recruiting low functioning Deaf clients, despite the researcher's requests. After some discussion, it was discovered that she was recruiting outliers because she herself was a doctoral student doing a qualitative dissertation. It is unknown how many low functioning Deaf individuals were included in the study at various sites because of such misunderstandings.

PARTICIPANT ISSUES

The video was loaded onto a laptop computer for maximum portability. With portability, the researcher could sample Deaf individuals at social gatherings, such as Deaf Coffee Chat. The added benefit was less reliance on agencies and less strain on agency staff. After obtaining IRB approval, the researcher realized a snag: how could the research team ensure privacy during the interview? The video portion did not require privacy because the participant would be watching the video and circling answers on a sheet of paper. However, answering questions from the SCID required maximum privacy; what was needed was to block others' line of sight. Moving to a different part of the coffee shop would not work because other individuals could still "oversee" the questions and answers.

The researcher and assistant considered ideas such as creating a portable curtain, using a van (which was dismissed because of the Texas summer heat) or building moveable boards that could serve as "walls." Ultimately, all of these ideas proved problematic, but are worth reviewing again in the future. The use of agencies seemed to

be the best option. Therefore, agency clients and staff were sampled during working hours, when the agency was open. This may have affected participation, as individuals who worked during the day were unable to participate unless they took off of work or got off early. Conducting the research in this way may have created an advantage, though, as it may have netted individuals with less education that are not usually included in research.

Despite all of the concerns and efforts to ensure privacy, the most surprising find of the study was the openness with which participants discussed their experiences with substances. Deaf individuals openly discussing their experiences with the researchers contradicted all existing literature (Boros, 1981; Guthmann & Blozis, 2001; Guthmann & Sandberg, 1995; Hetherington, 1979; Lipton & Goldstein, 1997; McCrone, 1982; Sylvester, 1986; Whitehouse et al., 1991; Woodward, 1980). Having reviewed the literature, the researcher expected difficulties recruiting participants and planned ways to ensure privacy. Two events indicated that the tide is turning. First, every site except one requested that the researcher open more slots because of the interest from participants. Usually, researchers are concerned about recruiting enough participants, as with her previous study (Alexander et al., 2005), the researcher again had to limit her intake of participants. Contrast this with Woodward's (1980) experience when creating a book for interpreters on drug signs, when Deaf individuals refused to help him for fear of stigma in the Deaf community. It is possible that paying participants even the small amount of compensation for their time may have increased interest in participating.

Second, agencies allowed the researcher to recruit by approaching individuals waiting for appointments and explaining the purpose of the study. The researcher also

recruited by posting the information on a local Deafness e-list and made an announcement at a local church. At every site, without exception, at least one Deaf individual would openly report, "Well, in the past, I've used pot and cocaine and…." or "I was an alcoholic, I spent time in jail…" not caring who could see. The researcher, mindful of confidentiality, would draw boundaries with them ("HOLD – TALK PRIVATE, TWO-OF-US, OK?"). The assistant independently corroborated his surprise at the forthrightness with which participants spoke about previous substance use. For example, one participant wanted to chat at length with the assistant about the recovery process and showed the assistant a Narcotics Anonymous card. Self-disclosure was not limited to age, functioning level, or education level. When the researcher informed participants that they did not need to go into detail, the participants would explain, "But I want to help other Deaf people."

There are several possible explanations for such openness by Deaf individuals. First, the individuals who are most comfortable discussing their substance abuse history may have self-selected into the study (those in recovery wished to be role models for other Deaf individuals or to assist in the research). Second, programs like the well-respected Fairview Minnesota Chemical Dependency Program for Deaf and Hard of Hearing Individuals may have been successful in their attempts to reduce the stigma of substance dependency in the Deaf community. Third, individuals who had been successfully treated be may proud of their recovery and therefore the most open to discussing it.

The most probable explanation for the forthrightness is related to Deaf culture's value for "frank talk." The Deaf community values frankness and the ability to be honest

with each other. Hinting in order to being polite is considered "hearing" and even offensive (Lane et al., 1996).

Consider this exchange between Glickman (1996) and a client who called his counseling office over the teletype (TTY). [A TTY is a machine that deaf individuals use to talk to one another on the telephone. "GA" means "go ahead" or "it's your turn"].

> "Hello, Neil Glickman here. GA."
> "I need a girlfriend. GA" (p.50)

What has not been discussed in the literature previously is the Deaf value of bluntness and openness about substance use behaviors. Various Deafness professionals were not surprised by this finding, explaining that "Deaf people will tell anyone anything" (mimes opening a coat) (personal communication, F. Ramont, October 4, 2004). When the researcher admitted her astonishment to a Deaf professional in recovery, he explained, "Everyone already knows all about me anyway" (undisclosed personal communication, September 10, 2004).

Finally, it is impossible to know how many participants were not open about substance abusing behaviors because they were minimizing or lying about their drug use. The most striking example was at the site where the agency allowed us to recruit participants during their weekly AA group and a member of the AA group, denied any problem with substances in the past. Other participants admitted to "softer" drugs such as marijuana, but denied use of harder drugs such as cocaine. Some participants described alcohol dependence, yet during the drug screening denied anything more than

occasional use, although their body language did not match their words. It is unclear how many Deaf individuals might have a polysubstance use disorder.

Anticipating these complex or contradictory responses, in the early stages of scale development, the researcher was advised to ask about alcohol and drugs in a combined item since respondents might be more reluctant to admit to drug use (e.g., #13, Is it hard to stop drinks or drugs because you are afraid you will lose your friends?) (D. DiNitto, D. Dittfurth, D. Springer, personal communication, January 7, 2004). To address this concern, Brown and Rounds (1995), developed the CAGE-Adapted to Include Drugs (CAGE-AID). Each of the four CAGE-AID items includes alcohol and drugs. Using a criterion score of one positive response, the CAGE-AID appears to increase sensitivity for more types of substance use disorders particularly polysubstance use. For the purposes of this study, if the participant met the SCID criteria for either alcohol or drug abuse, or alcohol or drug dependence, he or she were placed into the "clinical group," regardless of the substance they reported using.

Of the combined interviews from the pilot study and the final validation (N=156), only three participants admitted to current problems with drugs other than alcohol. Sixty-five participants met the criteria for either lifetime drug or alcohol abuse or dependence. Therefore, 62 participants who admitted to either lifetime drug or alcohol abuse or dependence were, by their own account, in remission. The veracity of their claims might be called into question, given the recidivism rates for substance abuse treatment and the lack of substance abuse services for the Deaf.

Participants were often offended to be asked about substance use at all. When asked about substance use, especially drugs, some participants emphatically signed,

"Never!" before the researcher could complete the screening question. The participants were encouraged to look at the list of drugs anyway, as the researcher reviewed each category of drugs in sign. A few participants were curious about the pictorial drug screening and commented, "Is this what they look like?" More commonly, participants had to be redirected to understand that the researcher was discussing "illegal drugs," as was the case with the participant who kept referring to her diabetes medication.

Procedures were in place in the event that a participant became overly distressed or revealed that they were suicidal or homicidal during the evaluation. Given the lack of mental health and substance abuse services for the Deaf, much thought was given to the plans that would meet the needs of participants that might need further interventions. If such a situation should arise, participants recruited at agencies would be referred back to their case managers. For participants recruited from the community, and not linked to an identifiable case manager, a list of local agencies that served Deaf clients was created, so that the researcher would know who to contact in the community to intervene. All participants were told that their participation was voluntary and they could end the interview at any time without penalty. Of the 157 interviews (N=25 for the pilot study, N= 131 for the final validation), the procedures only needed to be used twice. One participant misunderstood the purpose of the interview and thought she was being accused of using illegal drugs. The researcher explained to just look at the pictures and state if she had ever used any of the drugs. The participant became more upset, could not be calmed, and asked for her caseworker. The researcher stopped the interview, found the caseworker and explained the situation. The caseworker intervened and explained the same information again. The woman understood that she was not being accused and

agreed to continue the interview. This episode was well into the study, and the researcher was using the same protocol that had been used with all other participants. Similarly, Brauer (1992) reported in her research with Deaf individuals that some participants with substance abuse histories may be sensitive to the way that substance use questions are signed, which can cause unanticipated reactions and alter their response.

The second episode was a participant who was discontinued from the video portion of the study. This was the only participant from both the pilot sample and the final validation who did not complete both the interview and the video. After completing the face-to-face interview, she watched the video and became so disoriented that she would sign "yes" but circle "no" on the paper. As she grew more anxious, the research assistant asked her if she would like to stop the study and she answered "yes." She was directed to speak with her case manager at the agency. It is unknown what was causing her reaction: the length of time it took to answer both portions of the study (about 30 minutes total), the presence of the male assistant, the fact that the video could not accommodate her by checking in or slowing down, or the possibility that she had an underlying mental health disorder. The data from this participant were not included in the final analysis.

Another consideration was the inclusion of patterned answers. While entering data, the researcher noted that some of the score sheets had a pattern to the responses, usually "yes, yes, no, no, yes, yes, no, no." A visual scan of the answer sheet indicated that approximately eight of the answer sheets had a pattern throughout. An additional 13 of the answer sheets had a pattern only on the front of the answer sheet (questions 1- 9) but had a random pattern on the back of the sheet (questions 10-18). Of 131 participants

interviewed, 21 answer sheets had some type of pattern. The cases were cross-referenced with the researchers' notes and only two of these cases were also noted as being low functioners. The researcher noted which answer sheets had some of pattern so that these cases could be tracked during the final analyses (D. Springer, personal communication, August 19, 2004). It is impossible to know what motivated 21 individuals to answer in such a pattern: were these their actual responses, were they fooling around, or were they following their understanding of the introduction to the video which stated "If yes, circle yes; if no, circle no"? All 21 cases were retained in the final analysis.

USE OF AN ASSISTANT

The primary rationale for using an assistant was to give the researcher a break from signing all day. Two other benefits have also been noted: having someone to confer with for decisions that had to be made on the spot, and having an individual familiar with the study who could make independent observations. Several points should be noted about using an assistant for gathering the data.

First is the concern about the "disconnect" between the SCID interview and watching the video. Because the participants physically moved from one room to another and were no longer being asked substance abuse questions by the same person, they may have no longer "connected" the purpose of the interview with the assistant. This could be viewed as an advantage or a disadvantage. The disadvantage would be a lack of understanding about the purpose of the video, therefore, answering the questions on the SCID and the video inconsistently. The rapport that had been developed between the interviewer and the participant could also be broken when they had to start over again

with the assistant. The possible advantage is that the assistant would not know their previous answers, so they would be truly free to give answers that matched their real thoughts.

The gender of the researcher and assistant may have influenced participant answers. It is possible that some participants were comfortable with the female researcher, but uncomfortable with the male assistant for the video. Anticipating that some clients may be uncomfortable being interviewed by a man, when the SCID portion of the interview was completed, the researcher told all participants that they would go into another room to watch a video and that a man would be there to help them. The reverse could have also been true, as some participants might have been uncomfortable talking with a female researcher.

The researcher and the assistant are also differing ages. The researcher is in her mid-thirties and the assistant is in his early fifties. This was noted as possibly significant because informal comparisons at the end of the day revealed that older participants chatted with the assistant and revealed more spontaneous information to him. Likewise, the researcher found that individuals in their 20's and 30's appeared to be comfortable with her. The combination of differing ages and genders may account partially for the enormous amount of self-disclosure from Deaf individuals about their substance use histories.

Both the researcher and assistant are hearing but sign. The literature has suggested that the hearing status of professionals working with the Deaf is significant, and hearing counselors and researchers can heighten the distrust related to discussing substance abuse (Guthmann & Blozis, 2001). Consultants have suggested that being

hearing and signing is an advantage for substance abuse research because "…you are a hearing person that is separated from the Deaf World" (F. Ramont, personal communication, October 22, 2004). Perhaps being able to sign, but not being a member of the Deaf community increased the comfort level of Deaf participants, as they would be unlikely to see the researcher at a social event at a later date.

THE SCID

Given the enormous barriers that must be overcome, there is no standardized tool to establish depression and substance abuse diagnoses for Deaf populations. Tests that are normed for hearing populations are inappropriate for the Deaf because of language and cultural differences (Brauer, 1992; Freeman, 1989; Lane, 1993; Lane et al., 1996; Vernon & Miller, 2001) and modifying existing tests for the Deaf must be done with caution (Paul & Jackson, 1993). The DSM-IV has been specifically noted as problematic for Deaf populations because of its lack of sensitivity to Deaf culture (Lala, 1998). With these obstacles in mind, the SCID was translated into a basic sign gloss that would serve as a guide to match the individual participant's language preference. The SCID training videos were reviewed beforehand and consultants were used in order to assist with clarifying SCID items in sign. Despite this, several SCID items were consistently problematic because individual items either did not translate well or were not culturally sensitive for Deaf populations. The table below contains a discussion of problematic SCID items:

Table 9. Problematic SCID items

Problematic SCID Item	Discussion
Did you ever drink in a situation in which it might have been dangerous to drink at all? (Did you ever drive while you were really too drunk to drive?) IF YES AND UNKNOWN: How many times? (When?)	Item was problematic, as many of the Deaf individuals recruited at social service agencies do not drive. The SCID instructional video suggests asking participant if they worked while under the influence of alcohol which could have been dangerous (i.e., working around machinery). Some Deaf individuals are unemployed because SSDI can be a disincentive to work (see Lane et al., 1996, for a discussion on the topic). Data were collected during working hours; therefore, the research may have included many unemployed participants. Item may be unreliable for some Deaf populations.
Has your drinking gotten you into trouble with the law? IF YES AND UNKNOWN: How often? (Over what period of time?)	Deaf individuals may not be cited by law enforcement because of the difficulties getting an interpreter (Steinberg, 1991). Item may be unreliable for Deaf populations.

IF NOT ALREADY KNOWN: Has your drinking caused problems with other people, such as with family members, friends, or people at work? (Have you ever gotten into physical fights when you were drinking? What about having bad arguments about your drinking?) IF YES: Did you keep on drinking anyway? (Over what period of time?)	A common response to this item was "My family does not sign, so they were not a part of my world. My friends drank, too." Likewise, Deaf individuals are frequently in jobs where they can not communicate with supervisors or colleagues. Studies have indicated that for hearing populations, this item is less sensitive for women (Russell, 1994). Item may be unreliable for Deaf populations.

Have you had times when you would drink so often that you started to drink instead of working or spending time at hobbies or with your family or friends, or engaging in other important activities, such as sports or gardening?	The sign for "hobby" is regional; it usually had to be fingerspelled with expansion for some participants. The expansions used for "hobby" may have changed the item's meaning. This question was answered "no" for other reasons. Some participants reported that when they were younger, they were drinking heavily but could function while hungover, not missing school or sports. Other participants answered "no," stating, "My friends were drinking even more than me" or "Drinking was my hobby!" This item should be used cautiously and with much clarification with Deaf participants.

IF NOT ALREADY KNOWN: Has your drinking ever caused any psychological problems like making you depressed or anxious, making it difficult to sleep, or causing "blackouts?"	Guthmann and Sandberg (1998) report that there is no sign for many chemical dependency term such as "blackout." By and large, their report was supported by the research; "blackout" is one such example, although most participants understood the concept of a "blackout" when explained using expansion.
IF NOT ALREADY KNOWN: Has your drinking caused significant physical problems or made a physical problem worse?	Some participants themselves used the combination sign "BLACK" and "OUT." When prompted, they were able to correctly express the meaning of a "blackout."
IF YES TO EITHER OF ABOVE: Did you keep on drinking anyway?	At the same site, two participants from different states introduced the researcher to new signs for "blackout," indicating that "blackout" may have regional variations. Some doctors refuse to use interpreters with Deaf patients, which may limit understanding about health problems related to drinking. This item should be used cautiously and with much clarification with Deaf participants.

Have you found that you needed to drink a lot more in order to get the feeling you wanted than you did when you first started drinking? IF YES: How much more? IF NO: What about finding that when you drank the same amount, it had much less effect than before?	Explaining "tolerance" was difficult, even with the most educated participants. The sign for "tolerate" (as in "patience") is conceptually not the same. The difficulty appears to be in the time sequence "later need more than less before?" Alexander et al. (2005) report similar problems with the AUDIT. Other researchers have also noted that mental health screenings involving time and duration were challenging to translate into ASL (Steinberg et al., 1998). The researcher explained that "BEFORE, DRINK LITTLE BIT – DRUNK – NOW NEED MORE-MORE-MORE BECOME DRUNK." This was successful to varying degrees. This item should be used cautiously and with much clarification with Deaf participants.

Did you ever have any withdrawal symptoms when you cut down or stopped drinking like . . . . .. sweating or racing heart? . . . hand shakes? . . . trouble sleeping? . . . feeling nauseated or vomiting? . . . feeling agitated? . . . or feeling anxious? . . . or seizures? . . . or hallucinating, seeing things, not really there?	This item is later in the alcohol screening for the SCID. Some of the signs for the physical symptoms were confused by participants ("seizures" looks like "sleeping problems" and "hand shakes" looks like "anxiety") because the signs are very much alike and clarified through context. For individuals who appear to have met the criteria for substance dependence, the researcher found it easier to ask as an open-ended question, "What happened when you stopped using alcohol?" Participants almost always spontaneously described withdrawal symptoms. For other participants, the researcher used more expansion to clarify the differences in signs that look alike. This item should be used cautiously and with much clarification with Deaf participants.

Now I am going to ask you about your use of drugs or medicines.	ASL experts advised fingerspelling "drugs" because the sign may cause confusion if participants thought they were only being asked about "heroin." The variety of signs used to mean "street drugs" was observed during the research. Some participants signed "drugs" as a "D" in the open palm of the other hand (but meant illegal drugs), others got confused and reported non-abuse of prescription medication, and still others used the common sign for "drugs" (a needle going into the arm) to mean all street drugs. As was advised, it was best to fingerspell and clarify what "drugs" meant.
SHOW DRUG LIST TO SUBJECT.	The issue with using a written drug list has been discussed in chapter four. Using the original SCID categories, the researcher created a pictorial drug list of selected drugs. Participants were shown the pictorial list combined with written words and the researchers reviewed each category using local drug signs. The pictorial and written list was expanded with regional signs and, if needed, a description of how the drug affects the body. When discussing drugs with participants, it appears to be most effective to use written and pictorial list along with an explanation of how the drug impacts the body.

Did you ever use (DRUG) in a situation in which it might have been dangerous to be using (DRUG) at all? (Did you ever drive while you were really too high to drive?)	Same issues as the alcohol question. See above. Item may be unreliable for Deaf populations.
Did your use of (DRUG) ever get you into trouble with the law?	Same issues as the alcohol question. See above Item may be unreliable for Deaf populations.
IF NOT ALREADY KNOWN: Did your use of (DRUG) cause problems with other people, such as with family members, friends, or people at work? (Did you get into physical fights or bad arguments about your [DRUG] use?) IF YES: Did you keep on using (DRUG) anyway? (Over what period of time?)	Same issues as the alcohol question. See above. Note that marijuana users tended to answer "No" to this item, reportedly because a) the sedating effects of TCH cause them to be more relaxed and easier to get along with b) the lack of communication with the hearing world meant less association with individuals of different values. Item may be unreliable with Deaf populations.

Did you often have times when you would use (DRUG) so often that you used (DRUG) instead of working or spending time with your family or friends or engaging in other important activities?	Same issues as the alcohol question. See above. In addition, many individuals reported that they were able to use drugs and maintain their daily functioning, or in some cases, function better. Item may be unreliable with Deaf populations.
Did you find that you needed to use a lot more (DRUG) in order to get the feeling you wanted than you did when you first started using it? IF YES: How much more? IF NO: What about finding that when you used the same amount, it had much less effect than before?	Same issues as the alcohol question. See above. This was a difficult question for participants, as some drugs are or may be considered not addictive, (such as marijuana), but others are (such as cocaine). If the participants was a polysubstance user, he or she was often unclear which drug he or she was addicted to (e.g., reported physical addiction to marijuana). Using the non-dominant hand, listing was the easiest way to separate effects of different drugs for polysubstance users.

USE OF TECHNOLOGY

Technology was central to the dissertation, so it is necessary to discuss the impact of technology on the participants and on the research. Many participants were anxious about the video portion of the study, despite efforts to reassure them. Some participants appeared anxious when seeing the computer. The assistant reported that many participants were so anxious about what they were supposed to do that they really didn't

focus on the questions until about item #4. Similarly, when Lipton and Goldstein's study (1997) created an interactive video measuring substance abuse in the Deaf community, 50% of the respondents reporting that the video technology was confusing. Given participant anxiety about watching the video on computer, it is surprising that the beginning four items correlated with the total scale score as well as they did.

In the final validation, more participants were able to use the computer independently than in the pilot study. For approximately ten participants at three different sites, the assistant was able to give a brief demonstration and leave the room. This was ideal because it was believed that individuals would give the most authentic answers when they had privacy and control.

No individuals in the final validation were deaf-blind, but participants with lack of adequate vision correction or who wore bifocals or trifocals had difficulty viewing the screen. All participants reported the viewing screen was easier to see when the room was darkened with the overhead lights off. Similarly, three participants had orthopedic problems that affected their fine motor skills; as a result, they were unable to use the computer mouse or handle a pen. These three participants independently asked the assistant to circle their answers on the answer sheet. It is unknown how this may have influenced their answers.

Technology was significant to the research in other ways. The hearing world uses email or will pick up the phone for complex details. In general, Deaf individuals prefer email or text messaging. At all of the sites except one, the arrangements were made between the researcher and the Deaf administrator in charge. Therefore, all travel arrangements, permission forms, and feedback were done via email.

Email was even used to recruit participants, with interesting results. The researcher established a Yahoo account for the purpose of having a dedicated an account where participants could contact her with questions, and to recruit for the San Antonio site. San Antonio, unlike other large cities, has no one agency that serves the counseling needs of the Deaf. With approval from the IRB, the researcher got consent to collect data at the local Communication Services for the Deaf (CSD), an advocacy agency for the Deaf community. While the staff at CSD informed clients about the study, the researcher got the email addresses of approximately 100 local Deaf individuals from the person who maintains the local database. The researcher sent an email, whose message line was "ASL video research." The following day, participant responses were received, but the "regarding" line had been changed. Examples of the changes were "ASL drug/alcohol video test," "ASL test," and most interesting, "Want to make $20 cash now?" An unknown person posted the email on the Deaf Network of Texas, a statewide listserve, with the "Want to make $20 now?" line. It is striking to send out email one way and see how participants are receiving (or misperceiving) the information. No participants from other sites contracted the researcher, although several participants asked for her business card to learn about the research outcomes. Using a separate account for research is strongly recommended as the researcher's receipt of spam and computer viruses on her Yahoo email account increased 500% during the course of this research. Researchers who collect data using email recruiting methods should do so with caution.

Because the information was posted on the Deaf Network of Texas, individuals from around the state contacted the researcher about the study. Some were just curious and wanted to learn more, including an interpreter who wanted to improve her knowledge

of drug signs and a teacher who was teaching ASL to third graders (the researcher declined the teacher's request to bring the video to her school). A Deaf substance abuse prevention specialist from South Dakota also contacted the researcher as a result of the posting on the Deaf Network of Texas.

LIMITATIONS OF STUDY

One of the recruitment strategies was to rely on the "Deaf Grapevine" to spread the news that the research was underway, to help establish the legitimacy of the research, and to inform others that the researcher was indeed paying $20 cash. It appears to have been effective, but added the methodological concern of possible contamination. For example, a participant would be screened for the first part of the study with the SCID, and be moved to the second room to watch the video. While the participant was watching the video, the researcher would start screening the next participant. When the first participant completed the video, he or she would go into the area where other participants were waiting and sometimes describe the purpose of the research and the kinds of questions that would be asked. When reviewing participant rights with the third participant and thereafter, it was not uncommon to hear "I already know" or "I already heard." One participant commented, "Yes, you are giving out $20 – everybody knows that." Another participant late one afternoon reported that many of her friends told the participant that they had lied about all of the questions. Such participant talk may have influenced other participant answers. There is no way to simultaneously recruit via "the Deaf Grapevine" and also control for contamination, so this must be viewed as a possible limitation.

Similarly, when chatting at the beginning of the interview to establish rapport, the researcher informed participants that she was from The University of Texas at Austin. This would often start a "Do you know…?" conversation, as it so often does in Deafness. At four out of five sites, at least one participant knew someone affiliated with the project. Several participants knew the signer used for the video. It is not possible to know how familiar they were with the research or how familiarity with individuals working on the project may have influenced their answers.

Another limitation is social desirability bias, where the participant answers in the manner he or she thinks will present him or her in the best light to the researcher (Rubin & Babbie, 1997). Despite the researchers' efforts to protect participants' identities by not collecting names or identifying information, participants' self report of irresponsible or even illegal behavior can cause them embarrassment and discomfort. Likewise, some participants may have fabricated answers for the enjoyment of "putting one over" on the researchers, or even for the enjoyment of fooling hearing people (see Padden and Humphries Deaf in America [1988] for a discussion of Deaf individuals fooling the hearing as a means of gaining power.) It is impossible to know how many participants gave untrue answers.

Despite the intent of the researcher, the scale was not tested in the Western and Northwestern parts of the United States because of the difficulties accessing agencies to collect data. Therefore, it is not possible to say that the DAAD has been validated nationally. Further validity testing across regions is needed to establish whether the DAAD is understood by signers in the Western part of the United States.

The use of the SCID to establish known-groups validity must be viewed as a limitation. Though the SCID is the "gold-standard" for diagnosing mental disorders for hearing populations, several items are not culturally appropriate for Deaf populations, and one "no" answer could result in a participant being classified as having no substance use disorder. Although it was rare that a single "problem item" was the difference between having a diagnosis and not having one, it is conceivable that items in combination, if answered incorrectly, could cause an individual to be classified incorrectly. For example, consider the following question: "Have you had times when you would drink so often that you started to drink instead of working or spending time at hobbies or with your family or friends, or engaging in other important activities, such as sports or gardening?". Perhaps only a few participants responded "Drinking was my hobby!", but it is hard to judge if a "yes" answer to this question indicates a drinking problem or not. Combine these few misrepresentations with the other SCID items that are problematic for Deaf individuals, and the problem increases. Since there is no validated "gold-standard" to assess substance abuse and dependence in Deaf individuals, and without external corroboration such as a clinical record, the researcher had to, at times, use clinical judgment to make a diagnosis. Because clinicians often do not have clinical tools needed to work Deaf populations, this process was not different than what the average clinician who works with Deaf clients ordinarily experiences.

Finally, because data were collected at agencies, they were collected during working hours. Deaf individuals who worked a traditional 9-5 job may have been unable to participate, affecting the results.

UTILITY OF THE SCALE

A scale's usefulness is the ultimate measure of success (Springer, 1997). The challenge in creating the DAAD was to create a scale that was functional and appealing for Deaf populations. If the DAAD was not appealing to Deaf populations and also sensitive to Deaf culture, Deaf individuals would not comply with the screening. The DAAD has many uses for professionals who work with Deaf populations. First, it serves as a screening tool to indicate Deaf individuals who need further testing about problematic use of substances. Second, clinicians working with the Deaf have already reported a psycho-educational benefit from the DAAD for clients who need more exposure to alcohol and drug behaviors, and related signs such as "hangover." Sometimes seeing one's behavior on a screening tool can serve as a wake-up call to individuals who are unaware that they may have a problem with substances. Third, for hearing individuals that work with the Deaf and do not sign, the DAAD could be used instead of a written screening or a screening given through an interpreter. Removing the "middle man" may yield more accurate results. Fourth, the DAAD could be used as part of training programs to educate staff about substance use, as well as early detection and intervention with Deaf students and clients. Finally, the most far-reaching effect is that once the screening is placed online, Deaf individuals with computers can screen themselves.

All of these benefits, however, are limited to populations that use ASL. Lane et al. (1996) note that some countries like Kenya have incorporated ASL into local sign systems. It is unclear if the vernacular ASL terms used in the DAAD and cultural aspects of Deafness that may be unique to the Unites States would adequately measure substance

use problems in other countries. Hearing individuals unfamiliar with Deafness that may be unique to do not realize that sign language varies from country to country, and sometimes within the country. In this author's experience, one of the most commonly asked questions about sign language is, "Is sign language universal?" When told that it is not, the questioner often asks "Why not?" It is best to get the questioner to reflect upon their thinking by asking another question: "Why isn't any language universal?" Of course, spoken languages have evolved based upon history and needs of the people, and signed languages are no different. For example, American Sign Language (which uses a one-handed alphabet) is different from British Sign Language (which uses a two-handed alphabet). Therefore, it is not logical to assume that ASL users can understand BSL users, since the sign systems are not based upon spoken English. Consequently, use of the DAAD would be limited primarily to the United States.

IMPLICATIONS FOR SOCIAL WORK

PRACTICE. Clinicians have expressed their frustration with the lack of tools for working with Deaf clients, especially in the areas of alcohol and drug abuse (Guthmann & Sandberg, 1995; McCrone, 1982). In order to have tools to use with clients, clinicians have had to adapt or invent their own tools for clients. Poore (2003) created a video that reviews commonly used drugs and the AA "Big Book" is available on video, both in ASL. The Fairview Minnesota Chemical Dependency Program for Deaf and Hard of Hearing Individuals has created videotapes and handbooks for Deaf clients including two videotapes, Dreams of Denial and 12 Steps in American Sign Language, and a manual available for clinicians: Clinical Approaches, Choices, and Relapse Prevention Guide

(Fairview Update, 2004). Aside from these, few other tools are available for substance abuse practice. The DAAD provides clinicians with the first attempt at a standard screening tool to use with clients.

A macro-level concern must be raised about creating a screening for Deaf individuals. If a Deaf individual is screened with the DAAD and becomes aware that he or she needs further assessment and/or treatment, where will he or she go for help? Substance abuse programs for the Deaf are in short supply and hearing programs often do not provide the needed accommodations to make treatment effective (Guthmann & Sandberg, 1998; Hetherington, 1979; McCrone, 1982; Sylvester, 1986; Whitehouse et al., 1991).

This point was driven home by the participant who completed the SCID portion of the screening and then moved into the next room to watch the video. When he completed the video section, he approached the researcher and said, "OK, I am ready to begin now." It took some clarification to realize that he wanted counseling for his drug problem. The researcher felt foolish handing him a resource list of hearing drug treatment programs for his state, and telling him that the nearest program for the Deaf was 1,800 miles away. Perhaps as more and more Deaf individuals present themselves for substance abuse treatment, the programs will begin to become accessible and better serve their needs.

EDUCATION. Social workers may be poorly informed about the need for culturally sensitive substance abuse treatment for Deaf individuals. It is common to find that Deaf individuals are thought to be "hearing people who can not hear." The difficulties a Deaf individual faces when in substance abuse treatment were discussed in

Chapter Two. Yet, programs see little need to modify existing structures to accommodate the needs of the Deaf. Perhaps through the development of the DAAD, social workers and substance abuse providers will, at the very least, begin to question why Deaf individuals need a "culturally sensitive" video to screen for substance abuse, and therefore become more sensitive to effective ways to work with Deaf clients. Even better, new programs may be developed as social workers and substance abuse facilities increase their understanding of the needs of the Deaf.

RESEARCH. In the field of Deafness and substance abuse, only two empirically researched studies were located: Lipton and Goldstein (1997) and Alexander et al. (2005). Clearly, there is a scarcity of empirical research about Deafness and substance abuse. Because research is additive, the lack of research means no benchmarks exist to guide up-and-coming research. New researchers can only find what works through trial and error. Hopefully, the creation of this scale will cause other individuals to become interested in research and try to create an even better scale, or to create scales for other purposes. It would be ideal for such scales to be created by Deaf, hard-of-hearing, and Children of Deaf Adults (CODA) researchers, who would draw upon their experiences to create the best scales possible.

Hard-of-hearing populations receive less consideration in the literature than Deaf populations, even their numbers are greater (R. Aird-Minette, personal communication, January 20, 2004). It is unknown how many hard-of-hearing individuals and late-deafened adults (LDAs) have a substance use disorder. Scales for this population would need to accommodate individuals at various stages of hearing loss (from hearing individuals with recent loss, to those with a loss since birth, and everything in-between)

and with various communication modalities. Lipton and Goldstein (1997) developed a touch screen video that works by allowing participants to choose their sign method, SEE or ASL. Similar technology could be used to develop a scale for hard-of-hearing populations. The scale would be difficult to create, but it appears to be widely needed. Likewise, low functioning Deaf and Deaf-blind individuals also have great variability in their populations and are traditionally underserved.

PROFESSION. The profession of social work has traditionally focused on serving marginalized populations – except the Deaf. Social work does not contribute to discussions on Deafness as do sociology, anthropology, education and linguistics. A review of the literature located a handful of Deafness article written by social workers.

Social workers receive education and training on cross-cultural practices. While entire book chapters are dedicated to working with minority groups, the Deaf are seldom, if ever, discussed, even though they incorporate all other minority groups. In 1996, the National Association of Social Workers (NASW) published Standards for Cultural Competence defining cultural competence as "…the process by which individuals and systems respond respectfully and effectively to people of all cultures, languages, classes, races, ethnic background, religions, and other diversity factors in a manner that recognizes, affirms and values the worth of individuals, families, and communities and protects and preserves the dignity of each" (NASW, p.11) (emphasis added).

In order to ensure that Deaf populations receive culturally competent mental health services, it is imperative that all social workers be educated about the language, culture and treatment needs of the Deaf (Myers & Thyer, 1997). Increasing awareness

among social workers decreases potential for misdiagnosis and malpractice by mental health practitioners.

Social work's interest in social justice and use of strengths perspectives and the Person-In-Environment Model occupy a unique and valuable place among the helping professions. Our emphasis on advocacy, in particular, may serve as the link that some Deaf individuals need between the Deaf world and the hearing world's resources (Alexander, 2003). It is hoped that this dissertation will spark an interest for future social workers to become interested in contributing to the lives of Deaf clients.

RECOMMENDATIONS

Future recommendations for the improvement of the DAAD scale fall into two categories: improving the appeal of the video and improving the function of the scale.

In order for the DAAD to be utilized, the video must be appealing to Deaf individuals. The most common comment about the DAAD video was the small size of the viewing screen. Having a professional film the video in a studio may create video clips that are larger and more easily viewed since a different type of camera is used, and the lighting and background would be improved. The researcher was named a Fahs-Beck Scholar from the New York Community Trust, and the award money will allow her to have a professional shoot the video using the same signer and same questions as the original video tape.

On the day of filming the translations with the team, the idea of having the signer introduce herself was overlooked. The research assistant reported that when participants viewed item #15, "My name is 'Franky" with an 'F' on the chest," many participants

would sign "Yes – Franky" (using her name sign). In future versions of the scale, the signer should introduce herself in the beginning of the video with her name sign in order to follow the norms of Deaf culture.

Most participants appeared unsure of how to use the computer. To help participants become more comfortable, it might be helpful to have the participant answer initial demographic type questions via computer (such as a video clip that asked "Are you male or female?"). The next screen could have buttons similar to the "Yes or no?" buttons that move the user forward in the alcohol and drug questions. Because the validated screening will be put into the public domain, future versions of the scale will be housed in programs that allow participants to click their answers and have their score computed for them. At the end of the screening would be a list of services that the Deaf individual could contact for assistance and information. The result would be that Deaf individuals with computers could screen themselves. For individuals without computers or for agencies that wanted to use the screening as part of a clinical interview, a touch screen version which computes the score could be created, similar to the ones developed by Lipton and Goldstein (1997).

Computer scoring leads to the topic of improving the functioning of the scale. The DAAD does not have a cut point. Currently, individuals who answer "yes" to any one question should be referred for a further diagnostic assessment. Using a larger sample, a cut point could be established that would determine those likely to be substance dependent.

It is the researcher's hope that future researchers conduct psychometric studies on the reliability and validity of the DAAD. In particular, the researcher would like to

conduct validity testing across a more varied Deaf populations, encompassing various regions of the country.

Once the DAAD has been widely tested on a range of Deaf populations in a variety of settings to further determine its reliability and validity, a screening tool that can screen for substance abuse (in additional to dependence), like the AUDIT, should be created in ASL. Providers would then have one tool to screen clients for all substance use disorders. Finally, a set of ASL videos that uses Deaf actors in role plays to educate viewers about alcohol and drugs, including warning signs of addiction, would be incredibly useful for clinicians and educators.

CONCLUSION

While gathering data at the New York City site, the research team took a day trip to Ellis Island. There, immigrants were tested to be allowed passage into America. The display of the many tests given to the immigrants demonstrated that the tests were culturally bound. Immigrants that failed were returned to their country of origin.

It is interesting to think about how many deaf individuals may have passed through Ellis Island. Immigrants were not allowed into the country with a disability, so in order to screen out the deaf, the tests relied partly on the ability to hear and speak. Therefore, the number deaf individuals who were able to pass through Ellis Island is probably small. Little has changed in 100 years. We still give the d/Deaf tests that were meant for the hearing, and many get left behind.

There is a compelling need for more empirically based research on substance use disorders among the Deaf. The numerous challenges to be grappled with, outlined in this

dissertation, are not insurmountable. What is needed is actually what the Deaf community does best – being creative, working collectively, and overcoming.

Appendix A: Michigan Alcoholism Screening Test (MAST)

Points	Question
2	1.* Do you feel you are a normal drinker?
2	2. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before?
1	3.* Does your spouse or parents ever worry or complain about your drinking?
2	4. Can you stop drinking without a struggle after one or two drinks?
1	5.* Do you ever feel bad about your drinking?
2	6.* Do friends or relatives think you are a normal drinker?
2	7.* Are you always able to stop drinking when you want to?
5	8. Have you ever attended a meeting of Alcoholics Anonymous?
1	9. Have you gotten into fights when drinking?
2	10.* Has drinking ever created problems with you and your spouse?
2	11. Has your spouse or other family member ever gone to anyone for help about your drinking?
2	12. Have you ever lost friends or girlfriends/boyfriends because of your drinking?
2	13.* Have you ever gotten into trouble at work because of drinking?
2	14. Have you ever lost a job because of drinking?
2	15.* Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking?
1	16. Do you ever drink before noon?
2	17. Have you ever been told you have liver trouble? Cirrhosis?

2 18. Have you ever had delirium tremens (DTs), severe shaking, heard voices, or seen things that weren't there after heavy drinking?

5 19.* Have you ever gone to anyone for help about your drinking?

5 20.* Have you ever been in a hospital because of your drinking?

2 21. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem?

2 22. Have you ever been seen at a psychiatric or mental health clinic or gone to a doctor, social worker, or clergyman for help with an emotional problem in which drinking had played a part?

2 23.* Have you ever been arrested, even for a few hours, because of drunk behavior?

2 24.* Have you ever been arrested for drunk driving or driving after drinking?

*These questions are included in the short version of the MAST.

Appendix B: TWEAK

T – Tolerance: How many drinks can you hold ("hold" version; [equal to or greater than] 6 drinks indicates tolerance, or how many drinks does it take before you being to feel the first effects of alcohol? ('High' version; [equal to or greater than] 3 indicates tolerance.

W – Worried: Have close friends or relatives worried or complained about your drinking in the past year?

E – Eye openers: Do you sometimes take a drink in the morning when you first get up?

A – Amnesia: Has a friend of family member ever told you about things you said or did while you were drinking that you could not remember?

K – Kut-down: Do you sometimes feel the need to cut down on your drinking?

Scoring: 2 points each for eye opener, amnesia or kut down; sum all points; total 0-7 points.

Appendix C: The Alcohol Use Disorders Identification Test (AUDIT)

1. How often do you have a drink containing alcohol?

(0) Never

(1) Monthly or less

(2) Two to four times a month

(3) Two to three times a week

(4) Four or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?

(0) 1 or 2

(1) 3 or 4

(2) 5 or 6

(3) 7 or 9

(4) 10 or more

3. How often do you have six or more drinks on one occasion?

(0) Never

(1) Less than monthly

(2) Monthly

(3) Weekly

(4) Daily or almost daily

4. How often during the past year have you found that you were not able to stop drinking once you had started?

(0) Never

(1) Less than monthly

(2) Monthly

(3) Weekly

(4) Daily or almost daily

5. How often during the past year have you failed to do what was normally expected from you because of drinking?

(0) Never

(1) Less than monthly

(2) Monthly

(3) Weekly

(4) Daily or almost daily

6. How often during the past year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

(0) Never

(1) Less than monthly

(2) Monthly

(3) Weekly

(4) Daily or almost daily

7. How often during the past year have you had a feeling of guilt or remorse after drinking?

(0) Never

(1) Less than monthly

(2) Monthly

(3) Weekly

(4) Daily or almost daily

8. How often during the past year have you been unable to remember what happened the night before because you had been drinking?

(0) Never

(1) Less than monthly

(2) Monthly

(3) Weekly

(4) Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

(0) No

(2) Yes, but not in the past year

(4) Yes, during the past year

10. Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?

(0) No

(2) Yes, but not in the past year

(4) Yes, during the past year

Appendix D: Screening Tools Summary Chart

Name	Description	Psychometrics	Use with Females	Use with minorities	Strengths Limitations
CAGE	Developed by Ewing, 1968, 4 questions Original sample: General hospital population, 130 patients, 16 of whom dx with alcoholism	Norms: VA hospital (99% male), most studies on males Reliability: Internal consistency: .60 to .88 Validity: Face, known groups, convergent Sensitivity & Specificity: .48 to .94 .71 to .95 (varies: cut-score)	Poorest sensitivity in females DIF: 1 item out of 4	Functions differently for African-Americans than for whites.	Strength: Brief, easy to remember Limitation: Not sensitive to alcohol abuse

Name	Description:	Psychometrics	Use with Females	Use with minorities	Strengths & Limitations
MAST	Selzer, 1971, 24 questions Original sample: Five different groups – primarily white males	Norms: .83 to .93 Reliability: Test-retest: .85 to .97 Cronbach's alpha: .83 to .95 Validity: Correlates with other measures of alcohol use Sensitivity & Specificity: MAST: .89 to .99 .57 to .79 (varies with cut-score)	Lowered sensitivity to females at traditional cut points DIF (BMAST) 2 out of 10		Strength: Yes/no scoring Highest specificity Limitation: Length

Name	Description	Psychometrics	Use with Females	Use with minorities	Strengths & Limitations
TWEAK	Developed by Russell et al, 1994, 5 questions Original sample:	Norms: - .92- .94 Reliability & Validity: :None (per Russell, 2000) Sensitivity & Specificity .48 - .87 .68 - .94	Lowered sensitivity to females at traditional cut points Specificity and sensitivity for females is high DIF 3 out of 5 items	Functions differently for African-Americans than for whites.	Strength: Created specifically for females Limitation: Not sensitive for males.
AUDIT	Developed by WHO, 1989, 10 questions Original sample	Norms: .85 to . 90 Reliability: Good internal consistency: .80 to .94 Validity: Good construct validity. Correlates with other measures of alcohol abuse Sensitivity & Specificity: .40-.99 .66 - .99 Studies have found a one-factor and 3 factor structure			

Name	Description:	Psychometrics	Use with Females	Use with Minorities	Strengths & Limitations
DAST	Developed by Skinner, 1982. Adapted from the MAST. Original 28 yes-no questions, but later 20 questions was found to be as reliable as the former. Measures a continuum of drug abuse.	Factor Structure: Unidimensional Norms: CJ setting (all males, mostly African American) Reliability: .92 to .94 Validity: Most validity measures have focused on sensitivity and specificity Sensitivity & Specificity .82 to .96 .79 to .91 (varies with cut-score)			Strengths: Measures abuse or dependence as a continuum. Limitations: Does not distinguish between current and past drug-related diagnoses.
CAGE-AID	Developed by Brown et al. in 1992. Incorporates drug questions in CAGE questions.	Norms: General medical population ages 18-49 and psychiatric patients Reliability: Internal consistency Validity: None found Sensitivity & Specificity .70 and .40	Cut scores influence sensitivity. Cut score = 2, sensitivity is .65 Cut score = 1, sensitivity is .72	Cut scores influence sensitivity, although not specifically suggested	Strength: Short and easy to use. Limitation: Needs further validation

Information synthesized from works cited in dissertation.

Appendix E: Expert Review Packet

Instructions

I am seeking questions that are clear, brief, and diagnose substance use disorders in Deaf people. All statements will be translated into ASL for the video.

1). Enclosed are three cards with -1, 0 and 1 on it.

- **-1** means it **IS NOT** a good question to diagnose substance use disorders in Deaf people.
- **0** means **UNSURE** if a good question to diagnose substance use disorders in Deaf people.
- **1** means it **IS** a good question to diagnose substance use disorders in Deaf people.

2). The other cards have one statement. Sort into piles, according to -1, 0 or 1.

3). When you are done, put each pile into the separate Ziploc bags and mail back to me (envelope included).

4). Please enclose any feedback or other ideas you have for me.

Your time and expertise is greatly appreciated!

Original Item List

1. Have you or someone else been injured as a result of your drinking? (AUDIT)

2. Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down? (AUDIT)

3. Have you ever felt you should **C**ut down on your drinking/drug use? (CAGE-AID)

4. Have people **A**nnoyed you by criticizing your drinking/drug use? (CAGE-AID)

5. Have you ever felt bad or **G**uilty about your drinking/drug use? (CAGE-AID)

6. Have you ever had a drink/drugs first thing in the morning to steady your nerves or get rid of a hangover (**E**ye opener)? (CAGE-AID)

7. Do you feel you are a normal drinker? (MAST)

8. Have you ever awakened the morning after some drinking the night before and found that you could not remember a part of the evening before? (MAST)

9. Does your spouse or parents ever worry or complain about your drinking? (MAST)

10. Can you stop drinking without a struggle after one or two drinks? (MAST)

11. Do you ever feel bad about your drinking? (MAST)

12. Do friends or relatives think you are a normal drinker? (MAST)

12. Have you gotten into fights when drinking? (MAST)

13. Are you always able to stop drinking when you want to? (MAST)

14. Has drinking ever created problems with you and your spouse? (MAST)

15. Has your spouse or other family member ever gone to anyone for help about your drinking? (MAST)

16. Have you ever lost friends or girlfriends/boyfriends because of your drinking? (MAST)

17. Have you ever gotten into trouble at work because of drinking? (MAST)

18. Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking? (MAST)

19. Do you ever drink before noon? (MAST)

20. Have you ever been told you have liver trouble? Cirrhosis? (MAST)

21. Have you ever had delirium tremens (DTs), severe shaking, heard voices, or seen things that weren't there after heavy drinking? (MAST)

22. Have you ever been in a hospital because of your drinking? (MAST)

23. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem? (MAST)

24. I use drink/drugs to get started in the morning. (TA)

25. I use drink/drugs to deal with stress. (TA).

26. I use drink/drugs to help me relax. (TA)

27. I use drink/drugs to help me socialize. (TA)

28. I am a different person when I drink/drug. (TA)

<u>Deaf</u>

29. I sell alcohol or drugs to other Deaf people. (TA)

30. I go to Deaf social events because I know I can get alcohol/drugs there. (TA)

31. People say I am different when I drink or drug. (TA)

32. I am friends with other Deaf because they also drink/drug. (TA)

33. I go to Deaf events because I am not the only person drinking/drugging there. (TA)

34. I would go to support groups for drinking/drugs if they had them for Deaf. (TA)

35. There is gossip about my drinking/drugging in the Deaf community. (TA)

36. It is hard to stop drinking/drugging because I would lose my Deaf friends. (TA)

37. I know non-standard signs for drinking/drugging. (TA)

38. My friends and I have our own drinking/drugging signs. (TA)

39. I know more signs for drinking and drugging than the average Deaf person. (TA)

40. I get drinks/drugs at Deaf social events.

41. I have gone to programs for help with my drinking/drugging. (TA)

42. Hearing people can't tell when I am drunk or high. (TA)

43. I have gotten pulled over by police when drinking/drugging. (DD)

44. I have a name-sign related to drinking/drugging. (TA)

45. I have problems communicating in sign after I've been drinking/drugging. (TA)

Appendix F: Final Tally Sheet

Item	-1	0	+1
Have you or someone else been injured as a result of your drinking?		√ √	√√√√
Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?	√		√ √ √ √
Have you ever felt you should cut down on your drinking/drug use?		√	√ √ √ √
Have people annoyed you by criticizing your drinking/drug use?			√ √ √ √ √
Have you ever felt bad or guilty about your drinking/drug use?		√	√ √ √ √
Have you ever had a drink/drugs first thing in the morning to steady your nerves or get rid of a hangover?	√		√ √ √ √
Do you feel you are a normal drinker?	√	√	√ √ √

Have you ever awakened the morning after drinking or using drugs the night before and found that you could not remember a part of the evening?	√		√ √ √ √
Does your spouse or parents ever worry or complain about your drinking or drug use?			√ √ √ √ √
Can you stop drinking or using drugs when you want to?	√		√ √ √ √
Do you ever feel bad about your drinking or drug use?	√ √		√ √ √
Do friends or relatives think you are a normal drinker?	√ √	√ √	√
Have you gotten into fights when drinking or using drugs?			√ √ √ √ √
Are you always able to stop drinking or using drugs when you want to?	√	√	√ √ √
I have tried to stop drinking or using drugs in the past, but have not been able.			√ √ √ √ √

Has your spouse or other family member ever gone to anyone for help about your drinking or drug use?	√ √		√ √ √ √
Have you ever lost friends or girlfriends/boyfriends because of your drinking/drug use?	√		√ √ √ √
Have you ever gotten into trouble at work because of drinking or drugs use?		√	√ √ √ √
Have you ever neglected your obligations, your family, or your work for 2 or more days in a row because you were drinking or using drugs?	√		√ √ √ √
Do you ever drink or use drugs before noon?		√	√ √ √ √
Have you ever had medical problems as a result of your drinking or drug use? (such as cirrhosis, hepatitis)	√ √ √		√ √ √
Have you ever had withdrawal symptoms (felt sick) (such as delirium tremens (DTs), severe shaking, heard voices, or seen things that weren't there) when you stopped drinking or using drugs?	√ √		√ √ √

Have you ever been in a hospital because of your drinking or drug use?	√ √	√	√ √
Have you ever gone to anyone for help for a drinking or drug problem?	√	√ √	√ √
Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking or drug use was part of the problem?	√ √		√ √ √
Have you abused prescription drugs?	√ √		√ √ √
I use drink/drugs to get started in the morning.	√ √		√ √ √
I use drink/drugs to deal with stress.	√		√ √ √ √
I use drink/drugs to help me relax.		√	√ √ √ √

I use drink/drugs to help me socialize.	√		√ √ √ √
I am a different person when I drink/drug.	√	√ √	√ √
I sell alcohol or drugs to Deaf people.	√ √		√ √ √
I go to Deaf social events or parties to get alcohol/drugs.	√		√ √ √ √
People think I am different when I drink or drug.	√	√	√ √ √
I am friends with other Deaf because they like to drink/drug.		√	√ √ √ √
I go to Deaf events/parties so that don't have to drink/drug alone.	√		√ √ √ √
I would go to support groups for drinking/drugs if they had them for Deaf.		√	√ √ √ √
There is gossip about my drinking/drugging in the Deaf community.	√	√	√ √ √

It is hard to stop drinking/drugging because I am afraid I will lose my Deaf friends.		√ √	√ √ √
I know different [non-standard] signs for drinking/drugging.	√ √		√ √ √
My friends and I have made new drinking/drugging signs.		√	√ √ √ √
I know more signs for drinking/drugging than my friends or other Deaf.		√	√ √ √ √
I get drinks/drugs at Deaf social events/parties.	√	√	√ √ √
I enjoy fooling hearing people when I am drunk/high, because they can't tell.	√	√	√ √ √
Police have stopped me for drinking or drug use.		√	√ √ √ √
I have a name-sign related to drinking/drugging.*	√ √		√ √ √

I have a hard time signing after using drugs or drinking.	√	√	√ √ √
I don't trust others (friends, interpreters, counselors) to talk about my drinking/drug problems.	√	√	√ √ √
I would go to a support group for help cutting down, but I don't want people I know to see me there.			√ √ √ √ √
I can not socialize without being drunk/high.	√		√ √ √ √

OFFICE OF RESEARCH SUPPORT & COMPLIANCE

THE UNIVERSITY OF TEXAS AT AUSTIN

P.O. Box 7426, Austin, Texas 78713 (512) 471-8871 - FAX (512 471-8873)
North Office Building A Suite 5.200 (Mail code A3200)

Date: **6/9/2004**

PI(s): **Tara Alexander**
Ruth G McRoy

Department & Mail Code: **SOCIAL WORK, DEAN D3500**
SOCIAL WORK RES, C D3510

Dear: **Tara Alexander** **Ruth G McRoy**

IRB APPROVAL – IRB Protocol # **2004-04-0047**

Title: **Substance Abuse Screening with Deaf Clients: Validation of a Culturally Sensitive Scale**

In accordance with Federal Regulations for review of research protocols, the Institutional Review Board has reviewed the above referenced protocol and found that it met approval under an Expedited category for the following period of time:

Your study has been approved from 06/08/2004 – 06/08/2005

Expedited category of approval:

(1) ☐ Clinical studies of drugs and medical devices only when condition (a) or (b) is met. (a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review). (b) Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

(2) ☐ Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows: (a) from healthy, non-pregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or (b) from other adults and children2, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

(3) ☐ Prospective collection of biological specimens for research purposes by Non-invasive means. Examples: (a) hair and nail clippings in a non-disfiguring manner; (b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction; (c) permanent teeth if routine patient care indicates a need for extraction; (d) excreta and external secretions (including sweat); (e) un-cannulated saliva collected either in an un-stimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue; (f) placenta removed at delivery; (g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; (h) supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques; (i) mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings; (j) sputum collected after saline mist nebulization.

(4) ☐ Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications). Examples: (a) physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy; (b) weighing or testing sensory acuity; (c) magnetic resonance imaging; (d) electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography; (e) moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual.

(5) ☐ Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for non-research purposes (such as medical treatment or diagnosis). (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(4). This listing refers only to research that is not exempt).

(6) ☑ Collection of data from voice, video, digital, or image recordings made for research purposes.

(7) ☑ Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt).

(8) ☐ Continuing review of research previously approved by the convened IRB as follows: (a) where (i) the research is permanently closed to the enrollment of new subjects; (ii) all subjects have completed all research-related interventions; and (iii) the research remains active only for long-term follow-up of subjects; or (b) where no subjects have been enrolled and no additional risks have been identified; or (c) where the remaining research activities are limited to data analysis.

(9) ☐ Continuing review of research, not conducted under an investigational new drug application or investigational device exemption where categories two through eight do not apply but the IRB has determined and documented at a convened meeting that the research involves no greater than minimal risk and no additional risks have been identified.

____ **Please use the attached approved informed consent**

__✗__ **You have been granted Waiver of Documentation of Consent**

According to 45 CFR 46.117, an IRB may waive the requirement for the investigator to obtaina signed consent form for some or all subjects if it finds either:

___ The research presents no more than minimal risk **AND**

___ The research involves procedures that do not require written consent when performed outside of a reserach setting 45 CFR 46.117(c)(2)

or

__✔__ The principal risks are those associated with a breach of confidentiality concerning the subject's participation in the research **AND**

__✔__ The consent document is the only record linking the subject with the research 45 CFR 46.117(c)(1)

____ **You have been granted Waiver of Informed Consent**

According to 45 CFR 46.116(d), an IRB may waive or alter some or all of the requirements for Informed consent if:

___ The research presents no more than minimal risk to subjects;
___ The waiver will not adversely affect the rights and welfare of subjects;
___ The research could not practicably be carried out without the waiver; and
___ Whenever appropriate, the subjects will be provided with additional pertinent information after they have participated in the study.

RESPONSIBILITIES OF PRINCIPAL INVESTIGATOR FOR ONGOING PROTOCOLS:

(1) Report **immediately** to the IRB any severe adverse reaction or serious problem, whether anticipated or unanticipated.
(2) Report any significant findings that become known in the course of the research that might affect the willingness of subjects to continue to take part.
(3) Insure that only persons formally approved by the IRB enroll subjects.
(4) Use **only** a currently approved consent form (remember approval periods are for 12 months or less).
(5) **Protect the confidentiality of all personally identifiable information collected and train your staff and collaborators on policies and procedures for ensuring confidentiality of this information.**
(6) Submit for review and approval by the IRB all modifications to the protocol or consent form(s) prior to the implementation of the change.
(7) Submit a **Continuing Review Report** for continuing review by the IRB. Federal regulations require **IRB review of on-going projects no less than once a year** (a Continuing Review Report form and reminder letter will be sent to you 2 months before your expiration date). Please note however, that if you do not receive a reminder from this office about your upcoming continuing review, it is the primary responsibility of the PI not to exceed the expiration date in collection of any information. Finally, it is the responsibility of the PI to submit the Continuing Review Report before the expiration period.
(8) Notify the IRB when the study has been completed and complete the Final Report Form.
(9) Please help us help you by including the above protocol number on all future correspondence relating to this protocol.

Thank you for your help in this matter.

Sincerely,

Clarke Burnham, Ph.D., Chair
Institutional Review Board

cc: DRC

Appendix H: Final Items Filmed (English)

1. Have you or someone else been injured as a result of your drinking/drug use?
2. Have people annoyed you by criticizing your drinking/drug use?
3. Have you ever felt bad or guilty about your drinking/drug use?
4. Have you ever had a drink/drugs first thing in the morning to steady your nerves or get rid of a hangover?
5. Have you ever awakened the morning after drinking or using drugs the night before and found that you could not remember a part of the evening?
6. Have you ever gotten into fights (physical) when drinking or using drugs?
7. Have you ever gotten into fights (verbal) when drinking or using drugs?
8. Have you tried to stop drinking or using drugs in the past, but have not been able?
9. Have you ever lost friends or girlfriends/boyfriends because of your drinking/drug use?
10. Have you ever gotten into trouble at work because of drinking or drugs use?
11. Do you use drink/drugs to deal with stress?
12. Do many of your Deaf friends like to drink/drug?
13. Is it hard to stop drinking/drugging because you are afraid you will lose your Deaf friends?
14. Have stopped police stopped you more than once for drinking/drug use?
15. Is your name sign related to drinking/drugging?
16. Would you go to a support group for help cutting down, but you don't want people you know to see you there?
17. Can you socialize without being drunk or high?
18. Is there gossip about your drinking/drugging in the Deaf community?

Appendix I: Reading Ease Chart

Item Before Translation	Reading Level	Item After Translation	Reading Level	From
Have you or someone else been injured as a result of your drinking/drug use?	5.9	Have you or someone else been hurt because of your drinking/drug use? (Such as falling over, a car wreck, getting into a fight.)	4.8	AUDIT #9
Have people annoyed you by criticizing?	8.3	Have others bothered you by criticizing you're drinking/drug use? (Such as a friend complains about your drinking/drug use.)	6.0	CAGE-AID #2
Have you ever felt bad or guilty about your drinking/drug use?	4.8	Have you ever felt bad or guilty about your drinking/drug use? (Such as thinking "I should not drink/drug" or "I wish I did not drink/drug".)	3.7	CAGE-AID #3
Have you ever had a drink/drugs first thing in the morning to steady your nerves or get rid of a hangover?	7.4	Have you ever had a drink/drugs first thing in the morning to get rid of a hangover? (Such as after using alcohol or drugs, you wake up the next day. You feel awful, such as a stomachache or headache. You use more alcohol or drugs to make yourself feel better.)	5.3	CAGE-AID #4
Have you ever awakened the morning after some drinking or using drugs the night before and found that you could not remember a part of the evening before?	12.0	Have you ever found you could not remember part or all of a day when you drank/drugged?	5.1	MAST #2

Item Before Translation	Reading Level	Item After Translation	Reading Level	From
Have you gotten into fights when drinking or using drugs?	5.8	Were you ever in a fight when drunk/high?	3.6	MAST #9
Have you ever felt you ought to cut down on your drinking?	3.0	Have you struggled to stop drinking or using drugs in the past, but could not?	4.4	CAGE-AID #1
Have you ever lost friends or girlfriends/boyfriends because of your drinking/drug use?	5.9	Did a friend or boyfriend/girlfriend ever leave because of your drinking/drug use?	5.8	MAST #12
Have you ever gotten into trouble at work because of drinking or drug use?	7.5	Have you ever had trouble at work because of drinking or drug use? (Such as late to work, arguing with boss or co-workers, doing lousy work, papers piling on desk, and you can not keep up. It is because of your drinking or drug use.)	5.4	MAST #13
Do you use drink/drugs to deal with stress?	1.2	When you are stressed, do you use drinks or drugs to help you relax?	2.5	TA
Do many of your Deaf friends like to drink/drug?	1.6	Do you hang out with friends and groups because they like to drink/drug?	2.5	TA
Is it hard to stop drinking/drugging because you are afraid you will lose your Deaf friends?	6.5	Is it hard to stop drinks or drugs because you are afraid you will lose your friends?	4.2	TA

Item Before Translation	Reading Level	Item After Translation	Reading Level	From
Have police stopped you more than once for drinking/drug use?	2.6	Have the police stopped you more than once for drinking/drug use?	2.8	TA
Would you go to a support group for help cutting down, but you don't want people you know to see you there?	6.3	Do you keep away from groups for help with drinking/drugs because others might see you?	5.4	TA
Can you socialize without being drunk or high?	3.7	Can you socialize without being drunk or high? (You want to socialize and but have not yet used drink/drugs. In order to join in, you think, "Why not?" and you use drinks/drugs.)	3.0	TA
Is there gossip about your drinking/drugging in the Deaf community?	8.0	Is there gossip about your drinking/drugging in the Deaf community?	8.0	TA

Appendix J: Packets to Sampling Sites

Dr. Lisa Leiden, Ph.D.
Director, Office of Research Support and Compliance
P.O. Box 7426 Campus Mail
Austin, TX 78713
Lisa.leiden@mail.utexas.edu

Dear Dr. Leiden:
The purpose of this letter is to grant Tara Alexander, LCSW, a graduate researcher at the University of Texas at Austin, permission to conduct research at Agency X. The project, "Substance Abuse Screening with Deaf Clients: Validation of a Culturally Sensitive Scale," entails the development of a substance abuse screening tool in American Sign Language.

Ms. Alexander will be recruiting voluntary participants at our agency for the project. She will interview the participant using the SCID, and then show the video, asking participants to circle their answers on a sheet of paper, for a total time of about 30'. Approximately twenty-five Deaf individuals will be recruited at our site. She will be collecting no identifying information of our clients.

Agency X was selected because we are a well-known and well-established program that treats Deaf substance abusers. In addition, our location is an asset, as the researcher is gathering a cross-country sample. Ms. Alexander has agreed to keep informed us about the results of her study once it is completed.

I, , do hereby grant permission for Tara Alexander to conduct this project at Agency X.
Sincerely,

Information Sheet Sent to Agencies

Deaf Alcohol and Drug Video Research
Information Sheet

What is the project? The Deaf Alcohol and Drug Video screens Deaf people in ASL for substance abuse and/or dependence. In order to test the video, I am going to treatment centers for the Deaf around the United States and showing it to clients.

Client Questions:

Who can take part? Any Deaf person over 18 can be in the research. I have found that deaf-blind and mentally retarded deaf individuals have difficulties with the video.

How many Deaf people do you want? I am looking for approximately 40 Deaf people, with or without substance abuse disorders, at each site. This can include Deaf family, friends or staff.

What do they have to do? First, the client goes through a short interview with me where I ask about their experiences with alcohol and drugs (15'). When finished, they watch the video (it's loaded on my laptop computer – we help them with the computer part) and circle their answers on a sheet of paper (about 15'). When they've done both parts, they will get $20 cash.

What about confidentiality? I am collecting NO identifying information, such as names, sign names, dates of birth or social security numbers. It is better if clients do not tell me their name. We only ask them to initial a receipt saying they got the money – they can make up a name.

What about people who do not understand ASL? The video is made for ASL signers, but PSE or SEE signers have told us they understand it. Clients can review each question as many times as they wish. The video has captioning for those who want it. Non-signing oral or hard–of-hearing clients will have a harder time with the video.

What if people can not read or write? Everything is conducted in sign – there is no reading or writing.

Agency Questions:

What do you need from us? Three things. First, I need a letter that gives me permission to come to your agency. (I can send you an example if it's easier.) Second, I need for the agency to hang up flyers stating the days we will be on site collecting

research. Finally, if it is possible, I am asking for two small interview rooms (do not have to be next to each other) – one for the interview and one for the video. That's it – we'll do the rest.

How many people can you see in one day? If we have two interview rooms, we can see about 2-3 people in an hour. If we are in room, goes slower because I can not start the next interview until the first person is done watching the video and has left the room. We usually take a one hour lunch in the middle to rest from all the signing.

Do you needs to see our files? I do not need to see your client files.

Can we see the video? I would enjoy showing you the video before we start and hearing your thoughts.

Project Background:
Who wrote the questions? Who made the video? The questions are partly from the CAGE, MAST and AUDIT, which are written for hearing people. I wrote the Deaf questions. A team of hearing and Deaf experts translated them into ASL. A team of eight people worked together to translate the questions for the video. The video uses a native signer.

Who is doing the research and why? I created the video for my dissertation in the social work program at the University of Texas at Austin. I am a licensed clinical social worker (LCSW) and have worked with the Deaf for 15 years.

Will you be collecting data alone? I am collecting data with an assistant, who also signs and has professional experience with the Deaf. We both completed the National Institute of Health's training for conducting research.

How do we contact you? My personal email is talexander@utexas.edu If a client would like to email me with questions, the address is utdeaf@yahoo.com If I am traveling, call my cell phone (210) 771-21XX

I am looking forward to meeting you in person.

Tara Alexander, LCSW
Doctoral Candidate
U-Texas, School of Social Work
Austin, Texas

(210) 771-21XX (cell)
(210) 622-40XX (fax)

Mailing address:
Tara Alexander
Post Office Box 814
LaCoste, TX 78039-0814

The University of Texas at Austin
School of Social Work

Need Deaf people to try new ASL alcohol/drug video test.

$20 cash for interview & watch short video

CONFIDENTIAL

Do interview here on: Put date here in red
Tara Alexander, LCSW at utdeaf@yahoo.com

Approved by UT IRB#2004-04--0047

Appendix K: Interview Face Sheet

Structured Clinical Interview for DSM-IV I/P (Version 2.0)

Modified for use in the "Substance Abuse Screening with Deaf Clients: Validation of a Culturally Sensitive Scale" Study, Summer 2004

Interview #: **Site:**

Date: **Collected by:**

Age: Race/Ethnicity:

Sign language preference: Age when deafened:

Education – Highest level:

Type (mainstream, residential, mixed):

Family Members who signed:

Member of the Deaf community?

If met the criteria for substance abuse/dependence in past, when did they meet the criteria and when did they stop using?

Interview Face Sheet -- Revised

Structured Clinical Interview for DSM-IV I/P (Version 2.0)
Modified for use in the "Substance Abuse Screening with Deaf Clients: Validation of a Culturally Sensitive Scale" Study, Summer 2004

Site: Date: Collected by:

Gender	M F
Age:	
Race/Ethnicity:	Cauc Af-Am. His. Mixed Asian Other
Sign language preference:	ASL PSE Sign and Voice Oral Other
Age when deafened:	Birth Other: _____
Education – Highest level:	12 Other: _____
Type	Residential Mainstream Mixed Other
Family Members who signed:	None Mother Sibling Father Other
Member of the Deaf community?	Y N
State of residence:	TX

Interviewer notes:
SCID given in +/- format? Y N
Used pictorial screening? Y N

Data Entry:
Mj Depression: 0 1
Etho Abuse: 0 1
Etho Dep: 0 1
Subs Abuse: 0 1
Subs Dep: 0 1
Clinical: 0 1

Appendix L: SCID

A. MOOD EPISODES

IF THERE HAVE NEVER BEEN ANY CLINICALLY SIGNIFICANT MOOD SYMPTOMS, CHECK HERE ___ AND GO TO THE NEXT MODULE.

MAJOR DEPRESSIVE EPISODE		MDE CRITERIA	
Now I am going to ask you some more questions about your mood Now, I ask-you, what? Questions about your m-o-o-d, that mean feelings inside.		A. Five (or more) of the following symptoms have been present during the same two-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood, or (2) loss of interest or pleasure.	
Has there been a period of time when you were feeling depressed or down most of the day nearly every day? Happen before you feel depressed, <flat C on chest>, or sad, almost everyday? IF YES: How long did it last? (As long as two weeks?) Continue, one week, two weeks? WHEN: _____		(1) depressed mood most of the day, nearly every day, as indicated either by subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). Note: in children or adolescents, can be irritable mood.	? 1 2 3

. . . what about losing interest or pleasure in things you usually enjoyed? Happen before notice things interest, enjoy, but now finish, not? IF YES: Was it nearly every day? How long did it last? (As long as two weeks?) Every most everyday? Continue how long? Two weeks?		(2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated either by subjective account or observation made by others). IF NEITHER ITEM (1) NOR ITEM (2) IS CODED "3," GO TO **next module**	? 1 2 3

During this (PERIOD) . . . Happen that time depressed…			
..how was your appetite? (What about compared to your usual appetite?) (Did you have to force yourself to eat?) (Eat [less/more] than usual?) (Was that nearly every day?) (Did you lose or gain any weight) (How much?) (Were you trying to [lose/gain] weight?) Hungry you? Normal for you? Force-self <directional> eat? Eat how-much? More or same? Gain-weight or lose-weight? Want gain-weight/lose-weight?		(3) significant weight loss when not dieting, or weight gain (e.g., a change of more than 5% of body weight in a month) or decrease or increase in appetite nearly every day. Note: in children, consider failure to make expected weight gains. Check if: ____ weight loss or decreased appetite ____ weight gain or increased appetite	? 1 2 3
. . how were you sleeping? (Trouble falling asleep, waking frequently, trouble staying asleep, waking too early, OR sleeping too much? How many hours a night compared to usual? Was that nearly every night?) Sleep for you, like what? Get-in-bed, awake, <eyes open>, can't sleep, get-up early, or sleep continue-continue. How much sleep? Every-night?		(4) insomnia or hypersomnia nearly every day Check if: ____ insomnia ____ hypersomnia	? 1 2 3

. . were you so fidgety or restless that you were unable to sit still? (Was it so bad that other people noticed it? What did they notice? Was that nearly every day?) Feel inside hyper <jumpy>, restless seat. Other people complain? Say what? That almost everyday? IF NO: What about the opposite -- talking or moving more slowly than is normal for you? (Was it so bad that other people noticed it? What did they notice? Was that nearly every day?) Maybe opposite? Moving slow? Other people notice? Say what? That almost everyday?		(5) psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down) NOTE: CONSIDER BEHAVIOR DURING THE INTERVIEW Check if: ____ psychomotor retardation ____ psychomotor agitation	? 1 2 3
. . what was your energy like? (Tired all the time? Nearly every day?) Energy – how much you? Tired? Almost everyday?		(6) fatigue or loss of energy nearly every day	? 1 2 3
During this time . . . Happen depressed…			
. . how did you feel about yourself? (Worthless?) (Nearly every day?) How feel inside? <Flat five on chest> Worth nothing? Almost everyday? IF NO: What about feeling guilty about things you had done or not done? (Nearly every day?) Feel guilty <g on shoulder AND touch heart> inside about behavior? Almost every day?		(7) feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick) NOTE: CODE "1" OR "2" IF ONLY LOW SELF-ESTEEM Check if: ____ worthlessness ____ inappropriate guilt	? 1 2 3

. . did you have trouble thinking or concentrating? (What kinds of things did it interfere with?) (Nearly every day?) Problems concentrate, mind not on-goal? Cause problem where? Almost every day? IF NO: Was it hard to make decisions about everyday things? (Nearly every day?) Problems making decisions <decide AND alternating A hands> normal things? Almost every day?		(8) diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others) Check if: ____ diminished ability to think ____ indecisiveness	? 1 2 3
. . were things so bad that you were thinking a lot about death or that you would be better off dead? What about thinking of hurting yourself? Inside feel S-O bad, think about death or yourself, better if died? Think maybe will hurt-self or plan kill-self? IF YES: Did you do anything to hurt yourself? Experience before hurt yourself or try kill yourself?		(9) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide NOTE: CODE "1" FOR SELF-MUTILATION W/O SUICIDAL INTENT Check if: ___ thoughts of own death ___ suicidal ideation ___ specific plan ___ suicide attempt	? 1 2 3
		AT LEAST FIVE OF THE ABOVE SXS [A (1-9)] ARE CODED "3" AND AT LEAST ONE OF THESE IS ITEM (1) OR (2)	1 3

IF UNCLEAR: Has (OWN SIGN) made it hard for you to do your work, take care of things at home, or get along with other people? Hard for you take care things home or get along <go ahead> other people because depression?		C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning	? 1 2 3

		MAJOR DEPRESSIVE EPISODE CRITERIA A and C ARE CODED "3"	**1 3**

Indicate type:

1 - Single Episode _____

2 - Recurrent (i.e., to be considered separate episodes) _____

E. SUBSTANCE USE DISORDERS

ALCOHOL USE DISORDERS (LIFETIME)

SCREEN Q#1
YES NO

IF SCREENING QUESTION #1 ANSWERED "NO," CHECK HERE ___ AND SKIP TO *NON-ALCOHOL SUBSTANCE USE DISORDERS,* E.7

IF QUESTION #1 IS ANSWERED "YES," CONTINUE:

What are your drinking habits like? (How much do you drink?) (Has there ever been a time in your life when you had five or more drinks on one occasion?)

Experience you before drink, drink, drink, all-together five drinks <CLC> same time? OR: Use a lot drinks before one day, like 5?

IF NO: GO TO ***NON-ALCOHOL USE DISORDERS*** E. 5

When in your life were you drinking the most? (How long did that period last?) Drink most, grow up, old QQ		RECORD DATE OF HEAVIEST USE AND DESCRIBE PATTERN: _____ _____	

During that time . . . Before happen… how often were you drinking? Often drink you? what were you drinking? how much? Drink what? Drink reduce – how many? During that time . . . Before happen… did your drinking cause problems for you? Drinking cause screw up, problems for you? did anyone object to your drinking? Other people complain your drinking? IF ALCOHOL DEPENDENCE SEEMS LIKELY, CHECK HERE ___ AND SKIP TO *ALCOHOL DEPENDENCE,* E. 3. IF ANY INCIDENTS OF EXCESSIVE DRINKING OR ANY EVIDENCE OF ALCOHOL-RELATED PROBLEMS, CONTINUE WITH *ALCOHOL ABUSE.* IF NEVER HAD ANY INCIDENTS OF EXCESSIVE DRINKING AND THERE IS NO EVIDENCE OF ANY ALCOHOL-RELATED PROBLEMS, SKIP TO *NON-ALCOHOL SUBSTANCE USE DISORDERS,* E.7.	

LIFETIME ALCOHOL ABUSE		ALCOHOL ABUSE CRITERIA	
Let me ask you a few more questions about (TIME WHEN DRINKING THE MOST OR TIME WHEN DRINKING CAUSED MOST PROBLEMS). During that time… Ask-you more happen before you drink-drink-drink OR drink cause screw-up for you. Happen that…		A. A maladaptive pattern of alcohol use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following occurring within a twelve month period:	
Have you ever missed work or school because you were intoxicated, high, or very hung over? (How often? What about doing a bad job at work or failing courses at school because of your drinking?) You problems family or friends – why? Because drinks. How often? You experience problems work or failing school connected drinking? IF NO: What about not keeping your house clean or not taking proper care of your children because of your drinking? (How often?) Happen before you not keeping house clean OR taking care of children because of drinking? IF YES TO EITHER OF ABOVE: How often? (Over what period of time?) How often?		(1) Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to alcohol use; alcohol-related absences, suspensions, or expulsions from school; neglect of children or household).	? 1 2 3
Did you ever drink in a situation in which it might have been dangerous to drink at all? (Did you ever drive while you were really too drunk to drive?) You drink when dangerous? (driving) IF YES AND UNKNOWN: How many times? (When?)		(2) recurrent alcohol use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by alcohol use)	? 1 2 3

Has your drinking gotten you into trouble with the law? Your drinking connected law problems? IF YES AND UNKNOWN: How often? (Over what period of time?)		(3) recurrent alcohol-related legal problems (e.g., arrests for alcohol-related disorderly conduct)	? 1 2 3
IF NOT ALREADY KNOWN: Has your drinking caused problems with other people, such as with family members, friends, or people at work? (Have you ever gotten into physical fights when you were drinking? What about having bad arguments about your drinking? You drink, cause screw up with friends OR family members? You physical fight happen because drink? Verbal fights? IF YES: Did you keep on drinking anyway? (Over what period of time?) Problems, doesn't matter, you continue drinking anyway?		(4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)	? 1 2 3
		AT LEAST ONE "A" ITEM CODED "3"	1 3

IF ALCOHOL DEPENDENCE QUESTIONS HAVE NOT YET BEEN EVALUATED AND THERE IS ANY POSSIBILITY OF PHYSIOLOGICAL DEPENDENCE OR COMPULSIVE USE, GO TO *ALCOHOL DEPENDENCE,* ON PAGE E. 3.

OTHERWISE, GO TO *NON-ALCOHOL USE DISORDERS,* E. 5.

ALCOHOL ABUSE

ALCOHOL DEPENDENCE		ALCOHOL DEPENDENCE CRITERIA	
I'd now like to ask you some more questions about (TIME WHEN DRINKING THE MOST OR TIME WHEN DRINKING CAUSED MOST PROBLEMS). During that time… Ask-you more happen before you drink-drink-drink OR drink cause screw-up for you. Happen that…		A maladaptive pattern of alcohol use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following occurring at any time in the same twelve month period: NOTE: CRITERIA FOR ALCOHOL DEPENDENCE ARE NOT IN DSM-IV-TR ORDER	? 1 2 3
Have you often found that when you started drinking you ended up drinking much more than you were planning to? You plan drinking, maybe 1-2 "enough" but tempted, continue? IF NO: What about drinking for a much longer period of time than you were planning to? Maybe plan drink example 1 hour, but continue drink 2-3 hours?		(3) alcohol is often taken in larger amounts OR over a longer period than was intended	? 1 2 3
Have you tried to cut down or stop drinking alcohol? You try reduce OR quit drinking? IF YES: Did you ever actually stop drinking altogether? Drinking stop, pah? (How many times did you try to cut down or stop altogether?) How many time quit finish? IF NO: Did you want to stop or cut down? (Is this something you kept worrying about?) Not quit, but, yes wish quit. Worry drink too much.		(4) there is a persistent desire OR unsuccessful efforts to cut down or control alcohol use	? 1 2 3

Have you spent a lot of time drinking, being high, or hung over? You hangover a lot (expand if needed)?		(5) a great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects	? 1 2 3
Have you had times when you would drink so often that you started to drink instead of working or spending time at hobbies or with your family or friends, or engaging in other important activities, such as sports or gardening? Instead work or h-o-b-b-i-e-s, such basketball or fun things, <push aside> prefer you drink?		(6) important social, occupational, or recreational activities given up or reduced because of alcohol use	? 1 2 3

IF NOT ALREADY KNOWN: Has your drinking ever caused any psychological problems like making you depressed or anxious, making it difficult to sleep, or causing "blackouts?" Drinking caused emotional problems like depression, sleep <C-hands near eyes AND toss-and-turn> or get up next day, can't remember what happened? IF NOT ALREADY KNOWN: Has your drinking caused significant physical problems or made a physical problem worse? Physical problems connected drinking OR physical problems worse? IF YES TO EITHER OF ABOVE: Did you keep on drinking anyway? Choose drinking continue anyway?		(7) alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol (e.g., continued drinking despite recognition that an ulcer was made worse by alcohol consumption)	? 1 2 3

Have you found that you needed to drink a lot more in order to get the feeling you wanted than you did when you first started drinking? Notice need drink, drink, drink, for feel same, calm or happy or whatever? IF YES: How much more? IF NO: What about finding that when you drank the same amount, it had much less effect than before? Notice 1 drink dizzy, high, whatever. Now need 2, 3 more?		(1) tolerance, as defined by either of the following: (a) a need for markedly increased amounts of alcohol to achieve intoxication or desired effect (b) markedly diminished effect with continued use of the same amount of alcohol	? 1 2 3
Did you ever have any withdrawal symptoms when you cut down or stopped drinking like . . . If drinking and stop, notice withdrawal things for example <list, non-dominant hand> . . . sweating or racing heart? . . . hand shakes? . . . trouble sleeping? . . . feeling nauseated or vomiting? . . . feeling agitated? . . . or feeling anxious? . . . or seizure? . . . or hallucinate, think see things, not real there?		(2) withdrawal, as manifested by either (a) or (b): (a) at least TWO of the following: - - autonomic hyperactivity (e.g., sweating or pulse rate greater than 100) - - increased hand tremor - - insomnia - - nausea or vomiting - - psychomotor agitation - - anxiety - - grand mal seizures - - transient visual, tactile, or auditory hallucinations or illusions	? 1 2 3
IF NO: Have you ever started the day with a drink, or did you often drink or take some other drug or medication to keep yourself from getting the shakes or becoming sick? You drink finish, next day, get up, feel awful, stomach, headache. You-go drink, OR use drug, resolve, feel better?		(b) alcohol (or a substance from the sedative / hypnotic / anxiolytic class) taken to relieve or avoid withdrawal symptoms	

IF UNKNOWN: When did (SXS CODED "3" ABOVE) occur? (Did they all happen around the same time?) Problems <point list non-dominant hand>, about same-time?		AT LEAST THREE DEPENDENCE ITEMS CODED "3" (WITHIN THE SAME TWELVE MONTH PERIOD) GO TO ***NON-ALCOHOL**	1 3
IF ALCOHOL ABUSE QUESTIONS HAVE NOT YET BEEN ASKED, GO TO PAGE E.1 AND CHECK FOR ABUSE. GO TO *NON-ALCOHOL USE DISORDERS,* E. 7		ALCOHOL DEPENDENCE	1 3

NON-ALCOHOL SUBSTANCE USE DISORDERS (LIFETIME DEPENDENCE AND ABUSE)		
IF SCREENING QUESTIONS #2 AND #3 ARE BOTH ANSWERED "NO," CHECK HERE ___ AND SKIP TO THE NEXT MODULE. <Remember to fingerspell "Drugs">		**SCREEN Q# 2** **YES NO**
IF QUESTION #3 WAS ANSWERED "YES," CONTINUE:		
Now I am going to ask you about your use of drugs or medicines. Now, I will ask-you question about drugs OR medicines. SHOW DRUG LIST TO SUBJECT. <List non-dominant hand>		IF SUBJECT HAS NOT USED ANY DRUG FROM ANY CLASS MORE THAN ONCE, CHECK HERE ___ AND GO TO NEXT MODULE.
Have you ever taken any of these to get high, to sleep better, to lose weight, or to change your mood? You use before for high, sleep, help lose weight or emotions feel better? (IF MORE THAN ONE) Which drug caused you the most problems? Which problem most for you? <List non-dominant hand> IF SUBJECT DENIES PROBLEMS: Which one did you use the most?		**DONE –** **SHOW VIDEO**

Which you use most? <List non-dominant hand>	
INDICATE DRUG CLASS TO BE ASSESSED FOR DEPENDENCE/ABUSE CRITERIA SED/ HYPN/ ANX CANN ABIS STIMU LANTS OPI OID COC AINE HALL/ PCP POLY OTHER 3 3 3 3 3 3 3 3 1 1 1 1 1 1 1 1 E29 E30 E31 E32 E33 E34 E35 E36	
IF SUBSTANCE DEPENDENCE SEEMS LIKELY,CHECK HERE __ AND SKIP TO SUBSTANCE DEPENDENCE,* E. 9.	

LIFETIME SUBSTANCE ABUSE		NON-ALCOHOL SUBSTANCE ABUSE CRITERIA	
Now I'd like to ask you some questions about (TIME WHEN USED DRUG THE MOST OR TIME WHEN DRUG CAUSED THE MOST PROBLEMS). During that time... Ask-you more happen before drug cause screw-up for you. Happen that…		A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following occurring within a twelve month period:	
Did you miss work or school because you were very high or very hung over? (How often? What about doing a bad job at work or failing courses at school because you used [DRUG]?) You skip work OR school because high? How often? You experience problems work or failing school connected drugs? IF NO: What about not keeping your house clean or not taking proper care of your children because of using (DRUG)? (How often?) You not keeping house clean OR taking care of children because of drug? IF YES TO EITHER OF ABOVE: How often? (Over what period of time?)		(1) recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household)	? 1 2 3
Did you ever use (DRUG) in a situation in which it might have been dangerous to be using (DRUG) at all? (Did you ever drive while you were really too high to drive?) You use drug when dangerous? (expand: driving). IF YES AND UNKNOWN: How many times? (When?)		(2) recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)	? 1 2 3
Did your use of (DRUG) ever get you into trouble with the law? You have law problems connected with drugs?		(3) recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)	? 1 2 3

IF NOT ALREADY KNOWN: Did your use of (DRUG) cause problems with other people, such as with family members, friends, or people at work? (Did you get into physical fights or bad arguments about your [DRUG] use?) You verbal-fight with friends OR family members – why? Because of drugs? Physical fights? IF YES: Did you keep on using (DRUG) anyway? (Over what period of time?) Problems pop up, you continue drug anyway?		(4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)	? 1 2 3
		AT LEAST ONE "A" ITEM CODED "3"	1 3

SUBSTANCE ABUSE

SUBSTANCE DEPENDENCE		SUBSTANCE DEPENDENCE CRITERIA	
I'd now like to ask you some more questions about (TIME WHEN YOU WERE USING THE MOST DRUGS OR TIME WHEN DRUGS CAUSED MOST PROBLEMS). Ask-you more happen before drug cause screw-up for you. During that time... Happen that…		A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following occurring at any time in the same twelve month period: NOTE: CRITERIA FOR SUBSTANCE DEPENDENCE ARE NOT IN DSM-IV-TR ORDER	
Did you often find that when you started using (DRUG) you ended up using much more of it than you were planning to? You plan drugs, maybe 1-2 "enough" but tempted, continue anyway? IF NO: What about using it over a much longer period of time than you were planning to? Maybe plan drug example 1 hour, but continue drug 2-3 hours?		(3) substance is often taken in larger amounts OR over a longer period than was intended	? 1 2 3
Did you try to cut down or stop using (DRUG)? You try reduce OR quit drug? IF YES: Did you ever actually stop using (DRUG) altogether? Drug stop, pah? (How many times did you try to cut down or stop altogether?) How many time quit finish? IF NO: Did you want to stop or cut down? (Is this something you kept worrying about?) Not quit, but, yes wish quit. Worry drug too much.		(4) there is a persistent desire OR unsuccessful efforts to cut down or control substance use	? 1 2 3

Did you spend a lot of time using (DRUG) or doing whatever you had to do to get it? Did it take you a long time to get back to normal? (How much time? As long as several hours?) You using drug or try get? When use, notice long time for back normal again? (How long? Hours?)	(5) a great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects	? 1 2 3
Did you often have times when you would use (DRUG) so often that you used (DRUG) instead of working or spending time with your family or friends or engaging in other important activities? Instead work or h-o-b-b-i-e-s <push aside> prefer you drug?	(6) important social, occupational, or recreational activities given up or reduced because of substance use	? 1 2 3
IF NOT ALREADY KNOWN: Did (DRUG) cause any psychological problems like making you depressed, agitated, or paranoid? Happen drug cause emotional problems like depression, nervous or paranoid? Did (DRUG) cause any physical problems or make a physical problem worse? Physical problems connected drug OR physical problems worse? IF YES TO EITHER OF ABOVE: Did you keep on using (DRUG) anyway? Choose continue drug anyway?	(7) substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., recurrent cocaine use despite recognition of cocaine-related depression)	? 1 2 3
Did you find that you needed to use a lot more (DRUG) in order to get the feeling you wanted than you did when you first started using it? Notice before little bit drug dizzy, high, whatever, but now need more, more for high? IF YES: How much more? IF NO: What about finding that when you used the same amount, it had much less effect than before? Notice if drug same, example, two pills <CLC> or joints, not high same?	(1) tolerance, as defined by either of the following: (a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect (b) markedly diminished effect with continued use of the same amount of the substance	? 1 2 3

Did you ever had any withdrawal symptoms, that is, felt sick when you cut down or stopped using (DRUG)? If drugs and stop, notice withdrawal things for example <list, non-dominant hand>? IF YES: what symptoms did you have? REFER TO LIST OF WITHDRAWAL SYMPTOMS. IF NO: After not using (DRUG) for a few hours or more, did you sometimes use it to keep yourself from getting sick with (WITHDRAWAL SYMPTOMS)? Experience you get up, feel awful, stomach, headache. You-go drugs, resolve, feel better?	(2) withdrawal, as manifested by either of the following: (a) the characteristic withdrawal syndrome for the substance (b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms	? 1 2 3
IF UNKNOWN: When did (SXS CODED "3" ABOVE) occur? (Did they all happen around the same time?) When happen? About <flat five hand> same time?	AT LEAST THREE DEPENDENCE ITEMS CODED "3" within SAME 12 MONTH PERIOD SUBSTANCE DEPENDENCE	1 3

Appendix M: Texas Substance Abuse or Mental Health Follow-up:

Texas Alcohol and Drug Association
Phone: (800) 832-9623
Office: 9001 N. IH 35, Suite 105, Austin
Mail: P.O. Box 80529, Austin, TX 78708

Austin:
Travis County Services for the Deaf
Deborah Drummond, Director
2201 Post Road, Room 100
Austin, TX 78704
(512) 854-9205 (v)
(512) 854-9210 (tty)

Travis County
MHMR
1430 Collier Street
Austin, TX 78704
(512) 472-HELP (v)

Texas Commission for the Deaf and Hard of Hearing
Regional Specialist Service Providers: (Austin)
CSD of Texas, Region #7
Texas Commission for the Deaf and Hard of Hearing
PO Box 12904
Austin, TX 78711
(512) 407-3250 (v)
(512) 407-3151(tty)

San Antonio:
Bexar County Outpatient Clinic for Drug Treatment
Health Care Service 3031 IH-10 West
San Antonio, TX 78201
(210) 731-1320

Bexar County MHMR
3031 IH-10 West
San Antonio, TX
(210) 227- HELP (v)

Texas Commission for the Deaf and Hard of Hearing
Regional Specialist Service Providers (San Antonio):
CSD of Texas, Region #8
5323 Blanco Road
San Antonio, TX 78216
(210) 349-3332 (v/tty)

Dallas:
Deaf Action Center
3115 Crestview Drive
Dallas, TX 75235-8599
(214) 521-0407 (V/TTY)
counselor@deafactioncentertexas.org
http://www.deafactioncentertexas.org

MHMR of Collin County
Main Phone: 214-366-9407
Crisis Phone: 866-260-8000

Texas Commission for the Deaf and Hard of Hearing
Regional Specialist Service Providers: (Dallas)
Region #3
3115 Crestview Drive
Dallas, Texas 75235
214-521-0407 (V/TTY)
866-685-0407 (V/TTY)
dhhrs@yahoo.com

Houston:
Texas Commission for the Deaf and Hard of Hearing
Regional Specialist Service Providers: (Houston)
Region #6
Nightingale Adult Day Center
5802 Holly Street
Houston, TX 77074
(713) 981-1543 (V/TTY)
(713) 995-6376 (Fax)
(888) 932-0009 (Toll Free-V/TTY)
signlanges@aol.com

MHMR of Harris County
Crisis Phone: 866-970-4770
Main Phone: 713-970-7000

MHMR of Fort Bend County
Crisis Phone: 800-633-5686
Main Phone: 281-342-9387

National Programs:
The Minnesota Chemical Dependency Program for
Deaf and Harding of Hearing Individuals
2450 Riverside Avenue South
Minneapolis, MN 55454.
(800) 282-3323 (Toll Free-V/TTY)
www.mncddeaf.org/

National Deaf Academy
19650 U.S. Highway 441
Mount Dora, FL 32757
(352) 735-9570 (TTY)
(352) 735-9500 (V)
www.nationaldeafacademy.com

Appendix N: Final English Scale

Item	Corrected Item-Total	Alpha-if-Deleted	Content
2). Have others bothered you by criticizing your drinking/drug use? (Such as a friend complains about your drinking/drug use.)	.5557	.8617	Social
4). Have you ever had a drink/drugs first thing in the morning to get rid of a hangover? (Such as after using alcohol or drugs, you wake up the next day. You feel awful, such as a stomachache or headache. You use more alcohol or drugs to make yourself feel better.)	.6246	.8561	Dependence
8). Have you struggled to stop drinking or using drugs in the past, but could not?	.6752	.8517	Dependence
9). Did a friend or boyfriend/girlfriend ever leave because of your drinking/drug use?	.7464	.8460	Social
11. When you are stressed, do you use drinks or drugs to help you relax?	.5445	.8630	Psychological
12). Do you hang out with friends and groups because they like to drink/drug?	.5506	.8620	Social
13). Is it hard to stop drinks or drugs because you are afraid you will lose your friends?	.5585	.8611	Deaf

14). Have the police stopped you more than once for drinking/drug use?	.5609	.8616	Social (Legal Consequences)
15). Is your name sign related to drinking/drugs? (Such as, your name is "Franky" with an 'F' on the chest. Your friends change it to insult or tease you. "Your name is 'smoke marijuana.'").	.4712	.8672	Deaf
18). Is there gossip about your drinking/drugging in the Deaf community?	.6203	.8563	Deaf
Total Alpha		.8718	

Bibliography

Alexander, T. (2003). From pathology to culture: Shifting social work's view of Deafness. Unpublished paper.

Alexander, T. DiNitto, D. & Tidblom, I. (2005). Screening for substance use problems among the Deaf. *Alcohol Treatment Quarterly*

Allen, J. P., Reinert, D. F., & Volk, R. J. (2001). The alcohol use disorders identification test: An aid to recognition of alcohol problems in primary care patients. *Prev Med, 33*(5), 428-433.

Allen, T. E. (1994) Paper submitted to Pelavin Research Institute as part of the project, A Comprehensive Evaluation of the Postsecondary Educational Opportunities for Students who are Deaf or Hard of Hearing, funded by the U.S. Office of Special Education and Rehabilitative Services., Gallaudet University, 1994. http://research.gallaudet.edu/demographics/whodeaf.html, 2.12.2005

Baker, C. (1980). Sentences in American sign language. In Padden, C. & Baker, R. (Ed.), *Sign Language and the Deaf Community* (pp. 75-86). Washington DC: NAD Press.

Babor, T.F. (2000). Alcohol Use Disorders Identification Test (AUDIT). *Handbook of Psychiatric Measures.* Washington, D.C.: American Psychiatric Association.

Berman, B., Eckhardt, E., Kleiger, H., Wong, G., Lipton, D. Bastani, R., and Barkin, S. (2000). Developing a tobacco youth survey. *American Annals of the Deaf, 145, (3)*, 245-255.

Bohn, M., Babor, T., & Kranzler, H. (1995). The AUDIT: Validation of a screening instrument for alcohol problems in the emergency room. *Journal of Study Alcohol, 56*, 695-700.

Borges, G., & Cherpitel, C. J. (2001). Selection of screening items for alcohol abuse and alcohol dependence among Mexicans and Mexican Americans in the emergency department. *Journal of Study Alcohol, 62*(3), 277-285.

Boros, A. (1981). *Activating solutions to alcoholism among the hearing impaired* (Vol. Volume 2). New York: Plenum Press.

Bradley, K. A., Boyd-Wickizer, J., Powell, S. H., & Burman, M. L. (1998). Alcohol screening questionnaires in women - a critical review. *Journal of the American Medical Association, 280*(2), 166-171.

Brauer, B. A. (1992). The Signer Effect on MMPI Performance of Deaf Respondents. *Journal of Personality Assessment, 58*(2), 380.

Brown, R., Leonard, T., Saunders, L., & Papasouliotis, O., (1998). The prevalence and detection of substance use disorders among inpatients age 18 to 19: An opportunity for prevention. *Preventive Medicine*, *27*, 101-110.

Brown, R. & Rounds, L. (1995). Conjoint screening questionnaires for alcohol and other drug abuse: Criterion validity in a primary care practice. *Wisconsin Medical Journal, 94(3)*, 135-140.

Buchsbaum, D. G. (1995). Quick effective screening for alcohol abuse. *Patient Care, 29*(12), 56-62.

Buchsbaum, D., Buchanan, R., Centor, R., Schnoll, S., Lawton, M. (1991) Screening for alcohol abuse using CAGE scores and likelihood ratios. *Annals of Internal Medicine (115)*, 774-777.

Chang, G., Wilkins-Haug, L., Berman, S., & Goetz, M. (1999). The TWEAK: Application in a Prenatal Setting. *Journal of Studies on Alcohol, 60*(3), 306.

Cherpitel, C. J. (1999). Screening for Alcohol Problems in the U.S. General Population: A Comparison of the CAGE and TWEAK by Gender, Ethnicity, and Services Utilization. *Journal of Studies on Alcohol, 60*(5), 705.

Critchfield, A.B. (May, 2002). *Cultural diversity series: Meeting the mental health needs of persons who are Deaf.* National Technical Assistance Center for State Mental Health Planning (NTAC).

Corker, M. (1994). *Counselling - the deaf challenge*. England: Kingsley Publishers LTD.

Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory*. Orlando, FL: Harcourt Brace Jovanovich, Inc.

DeVellis, R. (2003). *Scale development* (2nd edition). Newbury Park, CA: Sage.

Dickert, J. (1988). Examination bias in mental health evaluation of deaf patients. *Social Work, 33*, 274-273.

Dyson, V., Appleby, L., Altman, E., Doot, M., Luchins, D., & Delehant, M., (1998) Efficiency and validity of commonly used substance abuse screening instruments in public psychiatric patients. *Journal of Addictive Diseases, 17(2)*, 57-76.

Eastman, G. (1980). *From student to professional: A personal chronicle of sign language*. Silver Springs:MD: NAD Press.

Ewing, J. (1984). Detecting interventions for alcohol problems: a review. *Addiction, 252*(14), 1905-1907.

Ewing, J. (1998). Screening for alcoholism using CAGE (Letter to the Editor). *Journal of the American Medical Association, 280*(22), 1904.

Ewing, J. (2000) CAGE Questionnaire. *Handbook of Psychiatric Measures.* Washington, D.C.: American Psychiatric Association.

First, M.B., Spitzer, R.L, Gibbon, M., and Williams, J.B.W. (2002). Structured Clinical Interview for DSM-IV Axis I Disorders, Research Version, Patient Edition. (SCID-I/P) New York: Biometrics Research, New York State Psychiatric Institute.

Freed, A. O. (1988). Interviewing through an interpreter. *Social Work, 33*, 315-319.

Freeman, S. T. (1989). Cultural and linguistic bias in mental health evaluations of deaf people. *Rehabilitation Psychology, 34*(1), 51-63.

Freeman, S. T., & Conoley. (1986). Training, experience and similarity as factors of influence in preferences of deaf students for counselors. *Journal of Counseling Psychology, 33*(2), 164-169.

Garretson, M. (1980). Foreword. In Padden, C. & Baker, R. (Ed.), *Sign Language and the Deaf Community* (pp. 75-86). Washington DC: NAD Press. v-vi.

Glickman, N. (1996). Introduction. In G. Harvey (Ed.), *Culturally affirmative psychotherapy with deaf persons* (pp. 1-56.). NJ: Erlbaum Associates.

Glickman, N., & Zitter, S. (1989). On establishing a culturally affirmative psychiatric inpatient program for deaf people. *JADARA, 23*(2), 46-59.

Guthmann, D., & Blozis, S. A. (2001). Unique issues faced by deaf individuals entering substance abuse treatment and following discharge. *American Annals of the Deaf, 146*(3), 294-303.
Guthmann, D., & Sandberg, K. (1998). Assessing substance abuse problems in deaf and hard of hearing individuals. *American Annals of the Deaf, 143*(1), 14-21.
Guthmann, D., & Sandberg, K. A. (1995). Clinical approaches in substance abuse treatment for use with deaf and hard of hearing adolescents. *Journal of Child & Adolescent Substance Abuse, 4*(3), 69-79.
Hair, J., Anderson, R., Tatham, R., Black, W. (1998). *Multivariate data analysis.* NJ: Prentice Hall.
Hetherington, R. (1979). Deafness and alcoholism. *Journal of Rehabilitation of the Deaf, 12*(4), 9-12.
Higgins, P. C. (1980). *Outsiders in a hearing world*. CA: Sage Publications.
Hodgson, R., Alwyn, T., John, B., Thom, B., & Smith, A. (2002). The Fast Alcohol Screening Test. *Alcohol and Alcoholism, 37*(1), 61-66.
Jacobs, L. (1986). *A deaf adult speaks out*. Washington DC: Gallaudet University Press.
Kelly, T. M., Donovan, J. E., Kinnane, J. M., & Taylor, D. (2002). A comparison of alcohol screening instruments among under-aged drinkers treated in emergency departments. *Alcohol and Alcoholism, 37*(5), 444-450.
Kerlinger, F. (1986). *Foundations of behavioral research(3rd edition).* New York, NY: Holt Reinhart & Wilson.
Kitchens, J. (1994). Does this patient have an alcohol problem? *Journal of the American Medical Association, 272*(22), 1782(1786).
Kuder, G.F. & Richardson, M. W. (1937). The theory of the estimation of test reliability. *Psychometrika, 2*, 151-160.
Kypri, K., McGee, R., Saunders, J., Langley, J. and Dean, J. (2002). Interpretation of items in the AUDIT questionnaire. *Alcohol & Alcoholism, 37*, 5, 465-467.
Lala, F.J. (1998). Is there room in the DSM for consideration of Deaf people? *American Annals of the Deaf, 143*,(4) 314-316.
Lane, H. (1993). *The mask of benevolence: Disabling the deaf community*. NY: Random House.
Lane, H., Hoffmeister, R., & Bahan, B. (1996). *A journey into the Deaf-World*. CA: Dawnsign Press.
Lewis, L. (1996). Deaf client, deaf therapist. In G. Harvey (Ed.), *Culturally affirmative psychotherapy with deaf persons* (pp. 1-56.). NJ: Erlbaum Associates.
Lipton, D. S., & Goldstein, M. F. (1997). Measuring substance abuse in the deaf. *Journal of Drug Issues, 27.*, 733-754.
Mayfield, D., McLeod, G., & Hall, P. (1974). The CAGE questionnaire: validation of a new alcohol screening instrument. *American Journal of Psychiatry 131*:1121-1123.
McCrone, W. (1982). Serving the deaf substance abuser. *Journal of Psychoactive Drugs, 14*(3), 199-203.
McEntee, M. K. (1993). Accessibility of mental health services and crisis intervention to the deaf. *American Annals of the Deaf, 138*, 26-30.

McNeece, C. A., & DiNitto, D. M. (1998). *Chemical dependency: A systems approach* (2nd ed.). Boston: Allyn & Bacon.
Myers, L. & Thyer, B. (1997) Social work practice with Deaf clients: issues in culturally competent assessment. *Social Work in Health Care(26)*161-76.
National Association of Social Workers (2001). Standards for cultural competence in practice. Washington, D.C.: NASW Press.
Nunnally, J. & Bernstein, I. (1994). *Psychometric Theory.* NY: McGraw-Hill, Inc.
Nelson, K., Bui, H., & Samet, J. (1997). Screening in special populations: A "case study" of recent Vietnamese immigrants. *American Journal of Medicine, 102*, 435-440.
Padden, & Humphries, T. (1988). *Deaf in America*. Cambridge: Harvard Press.
Padden, C. (1980). Culture of deaf people. In C. a. R. B. Baker (Ed.), *Sign Language and the Deaf Community* (pp. 89-103). Washington D.C.: NAD Press.
Peters, R., Greenbaum, P., Steinberg, M., Carter C., Ortiz, M., Fry, B., & Valle, S. (2000). Effectiveness of screening instruments in detecting substance use disorders among prisoners. *Journal of Substance Abuse Treatment*, *18*(4), 349-358.
Pinderhuges, E. (1989). *Understanding race, ethnicity, and power*. New York: The Free Press.
Pollard, R. (1994). Cross cultural ethics in the conduct of Deafness research. *JADARA* (27), 3, p.29-40.
Roe, D., & Roe, C. (1991). The third party: Using interpreters for the deaf in counseling situations. *Journal of Mental Health Counseling, 13*(1), 91-105.
Rothman, J. (2003). *Social work practice across disability*. Boston: Allyn and Bacon.
Rubin, A., & Babie, E. (1997). *Research Methods for Social Work Practice, Third Edition*. Pacific Grove, CA: Brooks Cole.
Russell, M. (1994). New assessment tools for risk drinking during pregnancy: T-ACE, TWEAK and others. *Alcohol Health and Research World, 18*, 55-61.
Russell, M (2000). TWEAK Test. *Handbook of Psychiatric Measures.* Washington, D.C.: American Psychiatric Association.
Saitz, R., Lepore, M. F., Sullivan, L. M., Amaro, H., & Samet, J. H. (1999). Alcohol abuse and dependence in Latinos living in the United States - Validation of the CAGE (4M) questions. *Archives of Internal Medicine, 159*(7), 718-724.
Saunders, J. B., Aasland, O. G., Amundsen, A., & Grant, M. (1993). Alcohol consumption and related problems among primary health care patients: WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption--I. *Addiction, 88*(3), 349.
Schafer, J., & Cherpitel, C. (1998). Differential item functioning of the CAGE, TWEAK, BMAST, and AUDIT by gender and ethnicity. *Contemporary Drug Problems, 25*(2), 399-409.
Selzer, M.L., (1971) The Michigan Alcoholism Screenings Test: the quest for a new diagnostic instrument. *American Journal of Psychiatry 127(12)*:16535-1658.
Selzer, M.L. (2000) Michigan Alcoholism Screening Test (MAST). *Handbook of Psychiatric Measures.* Washington, D.C.: American Psychiatric Association.
Skinner, H. (2000) Drug Abuse Screening Test (DAST). *Handbook of Psychiatric Measures.* Washington, D.C.: American Psychiatric Association.

Skinner, H.A. (1982). The Drug Abuse Screening Test. *Addictive Behaviors*, 7, 363-371.

Spector, P. (1992). *Summated rating scale construction: An introduction*. Newbury Park, CA: Sage Publications, Inc.

Springer, D. W. (1997). Development of the Adolescent Concerns Evaluation (ACE) rapid assessment instrument: Detecting risk indicators of runaway behavior in adolescents. (Doctoral dissertation, Florida State University, 1997). *Dissertation Abstracts International, 61*(8), 3355.

Springer, D. W., Abell, N., & Hudson, W. W. (2002a). Creating and validating rapid assessment instruments for practice and research: Part 1. *Research on Social Work Practice, 12*(3), 408-439.

Springer, D.W., Abell, N. & Nugent, W. (2002b). Creating and validating rapid assessment instruments for practice and research: Part 2. *Research on Social Work Practice, 12*(6), 768-795.

Staley, D. & El-Guebaly, N. (1990) Psychometric properties of the Drug Abuse Screening Test in a psychiatric patient population. *Addictive Behavior*. 15:257-264.

Stansfield, M. (1987). Assessment from the perspective of the sign language interpreter. In L. G. J. W. E. H. Elliot (Ed.), *Mental health assessment of deaf clients: A practical manual* (pp. 153-163). Boston: Little, Brown & Co.

Steinberg, A. G. (1991). Issues in providing mental health services to hearing-impaired persons. *Hospital and Community Psychiatry., 42*(4), 380-388.

Steinberg, A., Lipton, D., Eckhardt, E., Goldstein, M., and Sullivan, V. (1998). *The diagnostic interview schedule for Deaf patients on interactive video: A preliminary investigation. Am J of Psychiatry, 155*:11, 1603-1604.

Steinberg, A. G., Sullivan, V. J., & Loew, R. (1998). Cultural and linguistics barriers of mental health service access: The deaf consumer's perspective. *American Journal of Psychiatry., 155*(7), 982-984.

Sylvester, R. (1986). Treatment of the deaf alcoholic. *Alcoholism Treatment Quarterly., 3*(4), 1-23.

Tran, T. V., & Arioan, K., J. (2000). Developing cross-cultural research. *Journal of Social Work and Evaluation., 1*(1), 35-48.

Vernon, M., & Miller, K. (2001). Interpreting in mental health settings: Issues and concerns. *American Annals of the Deaf, 146*(5), 429-433.

Volk, R. J., Steinbauer, J., Cantor, S. B., & Holzer, C. E., 3rd. (1997). The Alcohol Use Disorders Identification Test (AUDIT) as a screen for at-risk drinking in primary care patients of different racial/ethnic backgrounds. *Addiction, 92*(2), 197-206.

Welsh, W.A. (1991) The economic impact of deafness. *Journal of the American Deafness and Rehabilitation Association*, 24, 72-80. As cited in NAD magazine October/ November 2003.

Whitehouse, A., Sherman, R., & Kozlowski, K. (1991). The needs of deaf substance abusers in Illinois. *American Journal of Drug and Alcohol Abuse, 17*(1), 103-113.

Woodward, James (1984). *Signs of drug use: An introduction to drug and alcohol vocabulary in American sign language*. Silver Spring, Md. : T.J. Pub

Zastrow, C. (1993). *Introduction to social work and social welfare*. Pacific Grove, CA: Brooks/Cole Publishing Company.

Vita

Tara Alexander was born and raised in New Orleans, Louisiana. She became interested in sign language in college and took an ASL course during the *Deaf President Now* movement in 1988. That summer, she took another ASL at Gallaudet University and volunteered at Louisiana School for the Deaf in Baton Rouge. Tara also volunteered as a paraprofessional at the Baton Rouge Crisis Intervention Center. She graduated with a Bachelor of Arts degree in Psychology from Louisiana State University in 1991. Tara received her MSW in 1993 from Boston College Graduate School of Social Work, which included an internship at Hayden Goodwill Inn, a residential treatment facility with a Deaf unit.

Tara worked onsite at the Colorado School for the Deaf and the Blind as part of The Deaf Services Team at Pikes Peak Mental Health Center in Colorado Springs, Colorado. Tara also worked for the Crisis Center as an on-call clinician and was an adjunct professor for the University of Southern Colorado. After becoming a Licensed Clinical Social Worker (LCSW), she had a private practice working with hearing and Deaf individuals.

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